

Birds of Michigan

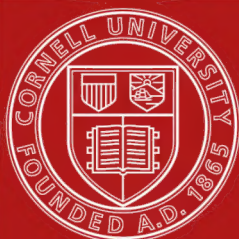


By H. J. Cook . . .

83



Michigan Agricultural College
Bulletin No. 94



Cornell University Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

MICHIGAN

AGRICULTURAL EXPERIMENT STATION

STATE AGRICULTURAL COLLEGE.

ZOOLOGICAL DEPARTMENT.

Corn. A. J. Cook

BIRDS OF MICHIGAN

ILLUSTRATED

BY A. J. COOK.

The Bulletins of this Station will be sent free to all newspapers in the State, and to such individuals interested in farming as may request it. Address all applications to the Secretary, Agricultural College, Michigan.

MICHIGAN AGRICULTURAL EXPERIMENT STATION.

Postoffice Address, Agricultural College, Mich.
Railroad, Express and Telegraph Address, Lansing, Mich.

A DEPARTMENT OF THE STATE AGRICULTURAL COLLEGE, AND, WITH IT, CONTROLLED
BY THE

INCORPORATED

STATE BOARD OF AGRICULTURE.

HON. FRANKLIN WELLS, Constantine, President of the Board,	term expires 1895
HON. A. C. GLIDDEN, Paw Paw,	" " 1895
HON. HENRY CHAMBERLAIN, Three Oaks,	" " 1897
HON. EDWIN PHELPS, Pontiac,	" " 1897
HON. CHAS. W. GARFIELD, Grand Rapids,	" " 1899
HON. I. H. BUTTERFIELD, Lapeer,	" " 1899
HON. JNO. T. RICH, Elba, Governor of the State,	} <i>Ex officio.</i>
HON. O. CLUTE, M. S., Agricultural College, President of the College,	

STANDING COMMITTEES OF THE BOARD.

The President of the Board is *ex officio* member of each of the standing committees.

FINANCE, C. W. Garfield, A. C. Glidden.	EXPERIMENT, I. H. Butterfield, H. Chamberlain.
FARM, I. H. Butterfield, Edwin Phelps.	VETERINARY, Edwin Phelps, I. H. Butterfield.
GARDEN, C. W. Garfield, Edwin Phelps.	INSTITUTES, A. C. Glidden, C. W. Garfield, O. Clute.
BUILDINGS, A. C. Glidden, I. H. Butterfield.	MECHANICS, H. Chamberlain C. W. Garfield.
EMPLOYEES, H. Chamberlain, A. C. Glidden, O. Clute.	MILITARY, C. W. Garfield, I. H. Butterfield.
WEATHER, A. C. Glidden, C. W. Garfield.	LAND GRANT, Edwin Phelps, H. Chamberlain.

STATION COUNCIL.

O. CLUTE, M. S.,	Director.
P. M. HARWOOD, B. S., Agriculturist.	ROBERT C. KEDZIE, M. A., M. D., Chemist.
L. R. TAFT, M. S., Horticulturist.	HENRY G. REYNOLDS, M. S., Sec. and Treas.

ADVISORY AND ASSISTANT STAFF.

P. G. HOLDEN, B. S., Assistant Agriculturist.	E. A. A. GRANGE, V. S., Consulting Veterinarian.
F. B. MUMFORD, B. S., Assistant in Agriculture.	G. C. DAVIS, M. S., Zoologist.
H. P. GLADDEN, B. S., " " Horticulture.	CHAS. F. WHEELER, B. S., Botanist.
R. J. CORYELL, B. S., " " " "	L. A. CLINTON, B. S., Assistant to Director.
W. L. ROSSMAN, B. S., " " Chemistry.	Mrs. L. E. LANDON, Librarian.
H. E. HARRISON, B. S., " " " "	

SUB-STATIONS.

Grayling, Crawford County, 80 acres deeded; Dr. O. Palmer, Local Agent.
South Haven, Van Buren County, 10 acres rented; 5 acres deeded; Hon. T. T. Lyon, President State Horticultural Society, Local Agent.

SUPPLEMENTARY—The following laws were passed by the legislature of 1893, and received too late for insertion in their proper places among the bird laws.—A. J. C.

AN ACT to amend section two of an act number seventy, of the public acts of one thousand eight hundred and seventy-seven, entitled "An act for the more effectual prevention of cruelty to animals," approved April twenty-fifth, eighteen hundred seventy-seven, being section nine thousand three hundred and ninety-two of Howell's Annotated Statutes.

SECTION 1. *The People of the State of Michigan enact*, That section two of act number seventy of the public acts of one thousand eight hundred and seventy-seven, entitled "An act for the more effectual prevention of cruelty to animals," approved April twenty-fifth, eighteen hundred seventy-seven, being section nine thousand three hundred and ninety-two of Howell's Annotated Statutes, be and the same is hereby amended so as to read as follows:

SEC. 2. Any person who shall keep or use any bull, bear, dog, cock, or other animal or fowl, or bird, except English sparrows, for the purpose of fighting or baiting, or as a target or to be shot at, either for amusement, or as a test of skill in marksmanship; and any person who shall be a party to, or be present as a spectator, at any such fighting, baiting, or shooting of any bear, dog, cock, or other animal, or fowl, or bird, except English sparrows, and any person who shall rent any building, shed, room, yard, ground or premises, for the purpose of fighting, baiting or shooting any animal, fowl or bird, except English sparrows, as aforesaid, or shall knowingly suffer or permit the use of any building, shed, room, yard, ground, or premises belonging to him or under his control, for either or any of the purposes aforesaid, shall on conviction thereof, be adjudged guilty of a misdemeanor: *Provided*, That no bounty shall be paid for any English sparrow that may be killed when used as a target, or to be shot at either for amusement or as a test of skill in marksmanship: *And provided*, That it shall not be lawful for any person or persons to engage in the propagation of English sparrows for the purpose allowed in this act or for any other purpose; and that on conviction for each or any offense mentioned in this act, the person or persons so convicted shall pay a fine of not less than ten (10) nor more than fifty (50) dollars, or be imprisoned in the county jail for a period of not more than ninety (90) days, or by both such fine and imprisonment in the discretion of the court.

This act is ordered to take immediate effect.

Approved April 27, 1893.

AN ACT to amend sections one and two of act number one hundred and fifty-two of the session laws of eighteen hundred and eighty-nine, being "An act to amend sections one, two and three of act number twenty-nine of the public acts of eighteen hundred and eighty-seven," approved March fifteen, eighteen hundred and eighty-seven, entitled "An act to provide for the payment of bounties for the killing of English sparrows," as amended by act number one hundred and fifty-two of the public acts of eighteen hundred and eighty-nine.

SECTION 1. *The People of the State of Michigan enact*, That sections one and two of act number twenty-nine, of the public acts of eighteen hundred and eighty-seven, approved March fifteen, eighteen hundred and eighty seven, entitled "An act to provide for the payment of bounties for the killing of English sparrows," as amended by act number one hundred and fifty-two of the public acts of eighteen hundred and eighty-nine, be amended so as to read as follows:

SECTION 1. *The People of the State of Michigan enact*, That every person being an inhabitant of this State, who shall kill "during the months of November, December, January, February and March" an English sparrow in any organized township, village, or city in this State, shall be entitled to receive a bounty of three cents for each sparrow thus killed, to be allowed and paid in the manner hereinafter provided.

SEC. 2. Every person applying for such bounty shall within said months take such sparrows in lots of not less than ten, to the clerk of the township, village or

city, within which such sparrows shall have been killed, "and shall thereupon make oath that such sparrows were killed during the aforesaid months mentioned in section one of this act and at no other time."

Said clerk shall thereupon decide upon such application, and if satisfied of the correctness of such claim, shall issue a certificate stating the amount of bounty to which such applicant is entitled and deliver the same to said applicant, and shall destroy such sparrows.

This act is ordered to take immediate effect.

Approved April 27, 1893.

AN ACT providing for the protection of Antwerp and homing pigeons.

SECTION 1. *The People of the State of Michigan enact*, That on and after the passage of this act it shall be unlawful for any person or persons to wilfully shoot, maim or kill any Antwerp or homing pigeon, either in flight or at rest, and any person guilty of wilfully killing, shooting or maiming such pigeon or pigeons as aforesaid, shall be guilty of a misdemeanor and upon conviction thereof shall for every such offense pay a fine of not less than ten nor more than twenty-five dollars, or be punished by imprisonment in the county jail not to exceed ninety days, or by both such fine and imprisonment in the discretion of the court.

SEC. 2. That it shall be unlawful for any person or persons to detain or entrap any Antwerp or homing pigeon: *Provided, however*, That such Antwerp or homing pigeon shall have the name of its owner stamped on its wing or tail or which may be identified by any device or mark, and any person or persons so detaining such pigeon or pigeons shall be deemed guilty of a misdemeanor, and upon conviction thereof before any justice of the peace or other court of competent jurisdiction shall for every offense pay a fine of not less than ten or not more than twenty-five dollars or be punished by imprisonment in the county jail not exceeding ninety days, or both such fine and imprisonment at the discretion of the court.

This act is ordered to take effect June first, eighteen hundred and ninety-three.

Approved May 24, 1893.

AN ACT to prevent the killing, hunting, or molesting in any way of Mongolian and English pheasant for a period of five years, and to regulate the time for hunting and for selling or offering for sale the same after that period.

SECTION 1. *The People of the State of Michigan enact*, That no person or persons shall pursue, hunt, kill, or attempt to kill or molest in any way whatever any Mongolian and English pheasants until the first day of November eighteen hundred and ninety-eight, and then only from the first day of November to the fifteenth day of December, inclusive, in each year.

SEC. 2. No person, firm or corporation shall for a period of ten years from and after the passage of this act sell, or attempt to sell, or expose for sale, or ship or transport out of this state, or attempt to ship or transport outside of this state or have in possession for the purpose of shipping or transporting outside of this state any Mongolian and English pheasant.

SEC. 3. Any person or persons violating the provisions of this act shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars nor more than fifty dollars, together with the costs of prosecution, and in default of the payment of the same shall be imprisoned in the county jail for a period not exceeding thirty days, or both such fine and imprisonment, in the discretion of the court.

Approved March 30, 1893.

INTRODUCTION.

Of the several lists of the birds of Michigan, from that of Dr. Abram Sager, published in 1839, to the most recent by Dr. Morris Gibbs, published in the *Ornithologist and Oölogist*, Vol. 10, 1885, not one is accessible to the younger students of ornithology. While some of the lists are quite full and accurate, not one gives the food and nesting habits of our birds. Such a list can but fill a pressing need, and must receive a most hearty welcome. Indeed I have had frequent inquiries for a catalogue by my students and others, and often have been urged to prepare a list.

Owing to my very numerous duties at the college, and my greater interest in the study of entomology I have, previous to this time, been unable to give any time to this work. The past summer the valuable manuscripts of the late Dr. H. A. Atkins came into my hands, and the State Board of Agriculture voted that I should prepare a list, to be sent out as a bulletin by the experiment station.

Having taught ornithology for the past twenty-six years at the Michigan Agricultural College to large classes, in which there were many good observers who had already made some progress in this study, and who represented many sections of the State, and having in the meantime made quite a considerable collection, through the aid of my students, of birds and birds' eggs for our museum, of which I have had the entire charge, I have been able to gather many and some valuable facts regarding the birds of our State.

I have also had in my possession all the manuscripts of the late Dr. H. A. Atkins, of Locke, Michigan, who was for twenty-nine years a most enthusiastic and conscientious student of this branch of natural history. Dr. Atkins kept a careful record of the birds of Locke, Ingham County, Michigan, with the date of the capture of each species, the time of the first appearance and exit, each year, and the full dates of all migrations. This record was very full and accurate, considering the meager literature that Dr. Atkins had at his command. Dr. Atkins visited me quite frequently, and I am assured of his entire devotion to this science, and his earnest effort to secure all possible accuracy in his determination of species and his statements of facts. I have received valuable aid from Dr. Atkins' carefully prepared manuscript, and have starred every bird that he reported from our State. For the dates, nesting habits, number and colors of eggs, I am much indebted to these manuscripts, which, through the kindness of Mrs. Atkins, were put in my possession. Nearly all the birds reported by Dr. Atkins have also been taken here, and so have come under my own personal observation. Dr. Atkins' observations were nearly all made at Locke, and the species starred were all taken at that place, unless special mention is made to the contrary.

I have also received great assistance from Prof. A. W. Butler, of Brookville, Indiana.

I have not only profited from his excellent "Birds of Indiana" (one of our most complete and most admirably arranged list of birds), but he has kindly reviewed my list and offered most valuable suggestions, has loaned me books and papers, and has given me very valuable assistance in the preparation of the bibliography.

I have profited much from the accurate lists of Michigan birds, prepared by Dr. Morris Gibbs of Kalamazoo, Michigan, from his many valuable articles in the several ornithological papers, and additions, corrections and suggestions given me in the preparation of this list. Dr. Gibbs has also helped me very much in the preparation of the bibliography.

The kindness of Professor J. A. Allen, and Drs. Elliott Coues, C. Hart Merriam, A. K. Fisher and Robert Ridgway in reviewing a preliminary list, and suggesting important changes, is most heartily appreciated. I have also received very great aid from the valuable manuals of Drs. Coues, Ridgway and Jordan, the excellent treatises of Samuels and Davie, and the other American works that treat of birds. I have been materially aided by my many students, especially Mr. C. B. Cook and L. Whitney Watkins, and by the many correspondents whose names appear in the text, especially Messrs. A. H. Boies, Hudson; Jerome Trombley, Petersburg; Stewart E. White, Grand Rapids; Profs. J. W. Simmons, Owosso; and James Satterlee, Greenville; Drs. J. B. Steere, Ann Arbor; W. C. Brownwell, Morrice, and Messrs. J. B. Purdy, Plymouth; F. M. Falconer, Hillsdale; E. E. Brewster, Iron Mountain; Ludwig Kumlein, Milton, Wisconsin; E. L. Moseley, Sandusky, Ohio; H. Nehrling, custodian city museum, Milwaukee, Wisconsin; C. S. Osborn, Sault Ste. Marie; M. L. Leach, Traverse City; Dudley E. Waters, Grand Rapids; and L. S. Foster of New York City.

The admirable illustrations were received through the kindness of Messrs. Estes and Lauriat, and are the same that are used by Dr. Coues to illustrate his valuable Manual of North American Birds. The illustration for the European Sparrow was received through the courtesy of Dr. Edwin Willits of the *Department of Agriculture*.

I have adopted the arrangement of the American Ornithological Union, and so give after the serial number of each species the number of the species as it occurs in the Union list. I have also appended in parenthesis, the number of the species as given in Coues' Key and Check List. This is for the convenience of beginners, who have or should have this valuable manual.

These numbers will prove of great convenience in correspondence and in making exchanges. Although I strongly recommend every student of birds and every would be student to procure Coues' Key to the Birds of North America, I have not used his arrangement or nomenclature, as they are not what he would use were he preparing his work today; but as I have given his numbers, there would be no difficulty in using this list and his invaluable book, which I regard as near perfection as any work of the kind which I have ever seen in any line of science. This list will enable any student to correct Coues' nomenclature according to the accepted nomenclature of the Ornithological Union, which was prepared by a committee of which Dr. Coues was himself a member. In the back part of the last edition of Dr. Coues' Key will be found the two nomenclatures side by side.

PECULIARITIES OF OUR MICHIGAN BIRD FAUNA.

Our bird fauna, like our entire fauna, owing to the protection given by the great lakes, which nearly surround us, is very interesting. As Dr. C. Hart Merriam has shown by a colored map, issued by the *Department of Agriculture* in March, 1892, we have

three distinct faunæ represented in our State: The Boreal in the north, which includes our Northern Peninsula and the northern part of the Southern Peninsula; the Transition, which occupies nearly all of the Southern Peninsula and reaches slightly into Indiana and Ohio; and the Upper Sonoran, which though mostly to the south of us, reaches into the southeastern and southwestern corners of the State. Thus we meet in Michigan many birds peculiar to the far north, and others that dwell for the most part in the states and countries south of us, even reaching to or beyond the gulf. The first are illustrated in the Bohemian Wax-wing, the Spruce Partridge, the Canada Jay and the Pine Grosbeak; while the Summer Red Bird, the Mocking Bird and the Cardinal Red Bird illustrate the second group. The large lakes attract to us many birds that are usually maritime, like the gulls and the terns; while in southern Michigan, with its prairies and woodlands both widely distributed, we get the prairie fauna, illustrated in the Pinnated Grouse, as well as those birds which are most at home in the forests of wooded areas, like most of the thrushes and the warblers. This accounts for the very large list of woodland warblers which we find in our state.

The following birds have been reported from Michigan, but after as full inquiry as I am able to make, I do not feel warranted in admitting them to this list: *Sula bassana*, *Anhinga anhinga*, *Camptolaimus labradorius*, *Somateria mollissima borealis*, *Ardea cœrulea*, *Nycticorax violaceus*, *Rallus longirostris crepitans*, *Tringa maritima*, *Pavoncella pugnax*, *Hæmatopus palliatus*, *Jacana spinosa*, *Dendragapus franklinii*, *Sayornis saya*, *Quiscalus quiscula*, *Acanthis hornemanni exilipes*, *Milvulus tyrannus*, *Ammodramus leconteii*, *Dendroica dominica*, *Sitta pusilla*, *Parus carolinensis*, and *Sialia arctica*. There are a few more that seem to be of very doubtful occurrence in our State, but I do not feel warranted in excluding them, but have expressed doubt as to their belonging to our Michigan fauna in the text.

I have appended to this introduction, not only as complete a bibliography as my time and resources would permit, but also our "Michigan Bird Laws," which are usually excellent, and very wholesome in their influence.

In the text I have recorded such facts regarding the food habits of our birds as will enable every one to judge of the economic importance of the various species. Where possible, as it is in most cases, I have given the food habits of the entire family and omitted a mention of them in speaking of the separate species.

It will be observed that I have secured records from the southern part of the state from Messrs. Boies, Trombley and Simmons; from the southern central from Messrs. Purdy, Steere and Gibbs; from the central, from Messrs. Atkins, Brownell, White, Moseley, etc.; from the north central, from Professor Satterlee and others; from the northern extremity of the southern peninsula, from Messrs. Leach, White, Boies, Osborn, etc., and from the northern peninsula, from Messrs. White, Boies, Brewster, Kumlein, Kneeland and others. Thus the observations, most of them continued for a long series of years, and made by trained observers have covered pretty thoroughly the entire State.

PROTECTION OF GAME.

ACT 276, OF THE LAWS OF 1889.

2215h. SEC. 8. No person or persons shall kill or destroy, by any means whatever, or attempt to take or destroy, any wild turkey at any time except in the months of October and November of each year.

2215i. SEC. 9. No person or persons shall kill or destroy, by any means whatever, any woodcock or any partridge or ruffed grouse, save only from the first day of September in each year to the first day of January following.

2215j. SEC. 10. No person or persons shall kill or destroy, by any means whatever, any wild duck, wild goose, or other wild water fowl or snipe, save only from the first day of September in each year to the first day of January in the year following: *Provided, however,* That it shall be lawful to hunt and kill jack-snipe, red-headed, blue-bill, canvas-back, widgeon, pin-tail ducks and wild geese, between the first day of September in each year and the first day of May next following.

2215k. SEC. 11. The taking, carrying, or sending by any means whatever into or through any county of this state, any of the game or animals which have been killed or captured contrary to the provisions of this act, or the hide of such animals, shall be illegal, and is declared to be an offense against the provisions of this act, in any county in or through which such game, animals, or hides may be taken.

2215l. SEC. 12. No person shall kill, capture, or destroy, or attempt to kill, capture, or destroy any colin or quail, sometimes called Virginia Partridge, before the first day of November, 1894, and thereafter only during the months of November and December of each year.

2215m. SEC. 13. No person shall kill or attempt to kill any pinnated grouse or prairie chicken until the first day of September, 1894, and thereafter only in the months of September and October in each year.

2215n. SEC. 14. No person or persons shall at any time take or capture or attempt to take or capture any turkeys, partridge, prairie chicken, pigeon, wild duck, wild goose or quail by means of nets, snares, pits, pitfalls, or cages: *Provided,* That it shall be lawful to trap quail and take them alive for the purpose of keeping them alive through the winter and for no other purpose whatever. Said quail are not to be transported to other places, but must be again liberated in the same place where they were caught when the weather is suitable in the spring.

2215o. SEC. 15. No person shall, at any time, make use of a swivel or punt gun for the purpose of killing, or attempting to kill, any wild duck or other wild fowl.

2215p. SEC. 16. No person shall, at any time, in any manner, rob, or destroy, or

injure the nest of any wild duck or other wild fowl, nor in any manner kill or molest the same at night or at any other time on their nesting places.

2215q. SEC. 17. No person or persons shall sell or expose for sale, or have in his possession for the purpose of selling or exposing for sale, any of the kinds or species of birds or animals protected by this act after the expiration of eight days next succeeding the times limited and prescribed for the killing of any such birds or animals: *Provided, however,* That it shall be lawful to expose for sale and to sell any live quail for the purpose of preserving the same alive through the winter. And it shall also be lawful for any person to take alive, on his own premises, at any time and in any manner, any wood duck, teal duck, or mallard duck, or wild turkey, for the sole purpose of domestication or for scientific or breeding purposes, and possession and transportation alive of such wild fowl, so taken on one's own premises, may be had for any such purpose: *Provided,* That in any prosecution for violation of any of the provisions of this act, the person claiming the benefit of this section shall prove on the hearing or trial that in good faith he so took alive such wild fowl or fowls for one of the purposes specified in this section, and if prosecuted for transporting them, that he is in good faith transporting them alive for such purpose; and it shall not be necessary for the prosecution to aver or prove that the taking alive of any such wild fowl or fowls was not done for domestication or for scientific or for breeding purposes.

2215r. SEC. 18. Any person or persons violating any of the foregoing provisions of this act shall be deemed guilty of a misdemeanor, and shall likewise be liable to a penalty of fifty dollars for each offense, and shall, on conviction thereof, stand committed to the common jail of the county until such penalty is paid: *Provided,* That such imprisonment shall not exceed thirty days.

2215s. SEC. 19. Any person who shall, at any time, within this state, kill any robin, nighthawk, whippoorwill, finch, thrush, lark, swallow, yellow bird, blue bird, brown thrasher, wren, martin, oriole, woodpecker, bobolink, or any song bird, or rob the nests of such birds, shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be fined five dollars for each bird so killed, and for each nest so robbed, or confined in the county jail for ten days, or both such fine and imprisonment, in the discretion of the court.

2215t. SEC. 20. That any railroad, express company, or other common carriers, or any of their agents or servants or other persons having any of the above named birds or animals in their possession for transportation, or shall transport the same after the expiration of five days next succeeding the time limited and prescribed for the killing of such birds and animals, shall be punished by fine not less than ten dollars nor more than one hundred dollars: *Provided,* That no such penalty shall apply to the transportation of live quail which are to be kept alive throughout the winter, or to the transportation of such birds or animals in transit through the state from other states where it is lawful to kill such birds or animals at the time of such transportation.

2215u. SEC. 21. No person or persons shall use any gun or guns, or fire-arms to maim, kill or destroy any wild pigeon or pigeons, at or within five miles of the place or places where they are gathered in bodies for the purpose of brooding their young, known as pigeon nestings; and no person or persons shall use any gun or guns, or fire-arms, to maim, kill, or destroy, any wild pigeon or pigeons within their roostings, anywhere within the limits of this state; and no person or persons shall, with trap, snare, or net, or in any other manner, take, or attempt to take, kill or destroy, or attempt to kill or destroy, any wild pigeon or pigeons, at or within two miles of such nesting place

at any time from the beginning of the nesting until after the last hatching of such nesting, anywhere within the limits of this state; and every person offending against the provisions of this section, or any part thereof, shall be subject to a penalty of fifty dollars with costs of suit.

2215v. SEC. 22. A prosecution may be brought by any person in the name of the people of the state of Michigan, against any person or persons violating any of the provisions of this act before any justice of the peace of the county in which such violation is alleged to have taken place, or before any court of competent jurisdiction; and it is made the duty of all prosecuting attorneys in this state to see that the provisions of this act are enforced in their respective counties, and they shall prosecute all offenders, on receiving information of the violation of any of the provisions of this act; and it is made the duty of sheriffs, under sheriffs, deputy sheriffs, constables and police officers, to inform against and prosecute all persons who there is probable cause to believe are guilty of violating any of the provisions of this act.

2215w. SEC. 23. The state game and fish warden is hereby authorized to issue permits for the hunting and killing any kind of bird out of season, said bird being sought exclusively as specimens for scientific purposes.

2215x. SEC. 24. All prosecutions under the provisions of this act shall be commenced within one year from the time such offense was committed.

2215y. SEC. 25. All acts and parts of acts in conflict with the provisions of this act are hereby repealed.

DESTRUCTION OF ENGLISH SPARROWS.

2259a. 1885, p. 4, Feb. 17, act 4. SECTION 1. *The People of the State of Michigan enact*, That it shall be lawful to kill the birds commonly called "English sparrows."

SEC. 2. All acts heretofore passed, contrary to the provisions of the preceding section, are hereby repealed.

2259b. 1887, p. 29, Mar. 15, Act 29; Am. 1889, p. 171, June 17, Act 152. SECTION 1. *The People of the State of Michigan enact*, That every person, being an inhabitant of this state, who shall kill an English sparrow in any organized township, village or city in this state shall be entitled to receive a bounty of three cents for each sparrow thus killed, to be allowed and paid in the manner hereinafter provided.

2259c. Am. Ib. 1889. SEC. 2 Every person applying for such bounty shall take such sparrow, or the head thereof, in lots of not less than ten, to the clerk of the township, village or city within which such sparrow shall have been killed, who shall thereupon decide upon such application, and if satisfied of the correctness of such claim, shall issue a certificate stating the amount of bounty to which such applicant is entitled and deliver the same to said applicant, and shall destroy the heads of such sparrows.

2250d. Am. Ib. 1889. SEC. 3. Such certificate may be presented by the claimant or his agent to the county clerk of the county in which such sparrow or sparrows have been killed, who shall thereupon draw a warrant for the amount on the treasurer of said county, and said treasurer shall, upon presentation of said warrant, pay the same from the general or contingent fund of said county.

GAME AND FISH WARDEN.

2197r. 1887, p. 27, Mar. 15, Act. 28. SECTION 1. *The People of the State of Michigan enact*, That it shall be the duty of the Governor to appoint some person, a resident of this state, game and fish warden. Said warden shall hold his office for four years, or until his successor has been appointed and qualified, unless removed for cause by the Governor; he shall receive a salary of twelve hundred dollars per annum, payable monthly, and shall also be reimbursed his actual expenses necessarily incurred by him while engaged in the performance of his duties, to be paid on the warrant of the auditor general, monthly, on the approval of his vouchers therefor.

2197s. SEC. 2. It shall be the duty of the said game and fish warden to enforce the statutes of this state for the preservation of moose, wapiti, deer, birds and fish, and to enforce all other laws of this state for the protection and propagation of birds, game and fish, now in force, or hereinafter enacted, and to bring or cause to be brought actions and proceedings in the name of the people of this state to punish any parties for the violation of said statutes and laws. Such actions and proceedings may be brought in the name of the people, in the like cases, in the same courts, and under the same circumstances as they may now or at any time hereafter be brought by any individual or by the prosecuting attorneys of the several counties under and by virtue of any laws now existing or hereafter enacted.

2197t. SEC. 3. Said warden may make complaint and cause proceedings to be commenced against any person for the violation of any of the laws for the protection or propagation of game or fish without the sanction of the prosecuting attorney of the county in which such proceedings are commenced, and in such case he shall not be obliged to furnish security for cost.

2197u. SEC. 4. Said game and fish warden shall have the same power to serve criminal process as sheriffs, and shall have the same right as sheriffs, to require aid in executing such process. Said warden may arrest, without warrant, any person caught by him in the act of violating any of the aforesaid laws for the protection or propagation of birds, game or fish, and take such person forthwith before a justice of the peace, or other magistrate having jurisdiction, who shall proceed without delay to hear, try and determine the matter, and the same proceedings shall be had as near as may be, as in other criminal matters triable before a justice of the peace, or other magistrate having jurisdiction. Such arrests may be made on Sunday, in which case the person arrested shall be taken before a justice of the peace, or other magistrate having jurisdiction, and proceeded against as soon as may be, on a week day following the arrest.

2197v. SEC. 5. Said warden shall, in the month of December in each year, file in the office of the auditor general, an account in writing, stating the days and parts of days spent in the discharge of his duty, the kind of service rendered and the places where rendered, and the expenses paid or incurred in the time of the discharge of such duties, which account shall be verified by the oath of said warden stating that the same is correct and true in every particular.

2197w. SEC. 6. Said warden shall, at the close of each calendar month, file with the secretary of state a report in writing, and in detail, stating the service performed by him during the last preceding month, including an account of the suits commenced at his instance, as herein provided for, the disposition made of the same, the result of any brought to trial, and the condition of any undisposed of, and any other particulars he may think proper, and no payment for services performed or expenses paid by said warden shall be made until he shall present to the auditor general, in addition to the usual oath of performance and payment, a certificate from the said secretary that he has made the report required by this act. The secretary of state shall cause the monthly reports of said warden, or so much thereof as may be of interest to the public, to be transmitted annually to the legislature when in session.

2197x. SEC. 7. The said game and fish warden shall have power to appoint a deputy or deputies, not exceeding three, in each county, who shall be residents thereof; said deputies shall have the same powers in their respective counties as herein provided for the warden himself, subject to the supervision and control of the warden. Said deputy warden or wardens shall receive such compensation as the board of supervisors of the counties in which such deputy warden or wardens reside may allow and provide for, except in the county of Wayne, where such compensation shall be fixed by the board of county auditors.

GENERAL LITERATURE.

Coues, Dr. Elliott, 1890—Key to North American Birds. Very fully illustrated. This work is very complete and admirable, an excellent manual in my judgment, for either the beginner or advanced student. The complete anatomy, full descriptions, excellent artificial key, and admirable illustrations, make it indispensable to every student of ornithology. The nomenclature and arrangement are not the latest, but an appendix corrects this in a manner that is very convenient and desirable. Price \$7.50. Estes & Lauriat, Boston, Mass.

Ridgway, Robert, 1889—Manual of North American Birds. This is simply a manual, and is very excellent for one who wishes simply to study systematic ornithology. The nomenclature and arrangement are recent. Price \$7.50. J. B. Lippencott, Philadelphia, Pa.

Jordan, Dr. David Starr, 1888—Manual of the Vertebrates of the Northern United States. This is very brief, but valuable to every zoologist. This succinct key helps us to identify all vertebrate animals, from fish to mammals, inclusive. It is very satisfactory, considering its size. All three of the above works refer more or less to Michigan birds. Price \$2.50. Jasen McClurg & Co., Chicago, Ill.

Davie, Oliver, 1889—Nests and Eggs of North American Birds. A few illustrations. This work is very full and accurate, and very valuable to one wishing to study the nesting habits of birds. There are many references to Michigan species. Price \$1.75. Hann & Adair, Columbus, Ohio.

Standard Natural History of the United States, Vol. IV. This large work is almost indispensable to the working naturalist. It is to be regretted that its size and cost place it beyond the reach of many. It is fully illustrated and embraces the ornithology of the whole world. It also treats of all other classes of animals, and is very complete. S. E. Cassino & Co., Boston, Mass.

The Auk. A very excellent monthly magazine, devoted to ornithology; the organ of the American Ornithologists' Union and the successor to the Bulletin of the Nuttall Ornithological Club. Its editors and contributors are among the ablest ornithologists in the country or the world. The magazine is a credit to our science and literature. Price \$3 00 a year. L. S. Foster, 35 Pine St., New York City.

The Ornithologist and Oölogist. This is a much less pretentious journal than the Auk, but is very interesting and valuable to the student of birds. Like the last mentioned, this contains much regarding our Michigan birds. It is especially valuable to the young ornithologist. Price \$1.00. Frank Blake Webster Co., Hyde Park, Mass.

Forest and Stream. This weekly journal is more of a sportsman's paper, but contains much that is helpful to the scientist. Several excellent lists of Michigan birds have appeared in this journal. Price \$4.00 per year. Forest and Stream Publishing Co., 318 Broadway, New York City.

The Oölogist. This valuable journal has already passed to its tenth volume. It is more than its name implies as it treats of general ornithology as much as of eggs. It has, like all of the above, many able contributors from Michigan. Price 50c per year. Frank H. Lattin, Albion, N. Y.

BIBLIOGRAPHY.

*Allen, Herbert, 1880. "Bird Notes from Michigan," *Oölogist*, Vol. V, No. 10, p. 79. Refers to Bohemian Wax-wing, Rough-legged Hawk, Broad-winged Hawk, Wild Turkey, etc.

Allen, J. A., 1878. "Rare Birds in Michigan," *Bull. Nutt. Orn. Club*, Vol. IV, p. 123. Statement of Western Meadow Lark and Oregon Snow Bird in Michigan on the authority of Dr. H. A. Atkins.

Allen, J. A., 1879. "Gibbs' List of Birds of Michigan," review of, *Bull. Nutt. Orn. Club*, Vol. V, p. 110.

Allen, J. A., 1880. "Steere's Birds of Ann Arbor," review of, *Bull. Nutt. Orn. Club*, Vol. VI, p. 46.

Anonymous, 1880. "Wild Pigeons in Michigan," *Scientific American*, Vol. 42, pp. 343-344. Notes on breeding and migrations, copied from the *Detroit Post*.

Anonymous, 1887. "The Evening Grosbeak at Saginaw, Michigan," *Forest and Stream*, Vol. XXXIV, p. 143.

Anonymous, 1892. "Capture of a Pelican near Grand Rapids," *Ornithologist and Oölogist*, Vol. XVII, p. 143. Copied from Grand Rapids paper. The bird was exhibited by G. K. Hurlburt.

Atkins, Dr. H. A., 1878. "Rare Birds at Locke," *Lansing Republican*, Nov. 8, 1878. Two species of Junco reported; "First Capture of Connecticut Warbler," *ibid.*, June 6, 1879.

Atkins, Dr. H. A., 1879. "Rare Birds in Michigan," *Bull. Nutt. Orn. Club*, Vol. IV, No. 2, 1879; "The Snow Bird in Southern Michigan in Summer," *ibid.*, Vol. IV, No. 4, 1879.

Atkins, Dr. H. A. 1879. "The Snowbird, *Junco hyemalis*, in Southern Michigan," *Bull. Nutt. Orn. Club*, Vol. IV, p. 238. Taken at Locke, July 8, 1879. Also records that C. W. Gunn took it at Grand Rapids, July 13, 1878.

Atkins, Dr. H. A., 1880. "Orange-crowned Warbler," taken at Locke, *Oölogist*, Vol. V, p. 72.

Atkins, Dr. H. A. 1881. "Bird Notes from Michigan," *Ornithologist and Oölogist*, Vol. VI, 1881; "Small Green-crested Flycatcher," *ibid.*, Vol. VI, 1881, dates of arrival are given for twenty-five consecutive years; "The Whip-poor-will," *ibid.*, Vol. VI, No. 6, 1881; "Date of Arrival of Scarlet Tanager and Baltimore Oriole for 25 years," *ibid.*, Vol. VI, No. 2, 1881.

Atkins, Dr. H. A. 1881. "Birds of Locke," *Oölogist*, Vol. V, 1881, No. 12, p. 93. Note

* A few of these references I have not been able to verify, and so there may be an occasional error.

is made of Song Sparrow, Jan. 1, and Red-bellied Nuthatch, Dec. 19. He also notes taking of Song Sparrow two years in January, four in February, and once in March, during 28 consecutive years of observation.

Atkins, Dr. H. A., 1882. "Capture of Chipping Sparrow in Locke, Michigan, in winter (Dec. 19, 1881)," Ingham County Democrat (Mason, Michigan), Jan. 5, 1882. Thought to be the first capture of this bird in Michigan in winter.

Atkins, Dr. H. A., 1882. "Our two Cuckoos breeding in one nest," Ornithologist and Oölogist, Vol. VII, 1882, p. 189; "Tufted Titmouse," *ibid.*, Vol. VII, 1882.

Atkins, Dr. H. A., 1883. "Carolina Chickadee Taken at Locke," Williamston Enterprise, Nov. 14, 1883; reports a small flock of Western Meadow Larks, *Sturnella neglecta*, at Locke in October, *ibid.*, Oct. 3, 1883.

Atkins, Dr. H. A., 1883. "American Redstart," Ornithologist and Oölogist, Vol. 8, p. 31. Gives dates of its arrival at Locke, Michigan, for 26 consecutive years.

Atkins, Dr. H. A., 1883. "Obituary of," The Auk, Vol. I, p. 391.

Atkins, Dr. H. A., 1884. "List of Winter Birds of Locke," Lansing Republican, Jan. 1884. This is a list of December birds and includes the Meadow Lark; "List of Birds in January, *ibid.* Feb. 14, 1884; "Winter birds of Locke in February," *ibid.* March 6, 1884.

Atkins, Dr. H. A., 1884. "Sandhill Crane," Ornithologist and Oölogist, Vol. IX, 1884, p. 6. Nest described and the dates of the arrival of the bird given for twenty-seven years.

Atkins, Dr. H. A. 1884. "Winter Birds of Locke, Michigan," Ornithologist and Oölogist Vol. IX, p. 31; "Summer Birds of Locke, Michigan," *ibid.* p. 43; "Five additions to the avi-fauna of Michigan," *ibid.* p. 81, discusses Long-tailed Chickadee, Brown-headed Nuthatch, Gray-headed Snowbird, Western Nonpareil and Ground Dove.

Atkins, Dr. H. A., 1885, "Summer Birds of Locke, Michigan," Ornithologist and Oölogist, Vol. X, p. 3. Includes eighty-two species; "The Bay-breasted Warbler, at Locke, Michigan," *ibid.* p. 55; "Obituary Notice of," *ibid.* p. 120.

Bailey, Prof. L. H., 1873. "Bird Friends of the Pomologist." Report of Michigan Pomological Society, 1873, p. 127.

Barrows, Walter B., 1889. The English Sparrow (*Passer domesticus*) in North America, especially in its Relation to Agriculture. Prepared under the direction of Dr. C. Hart Merriam, Ornithologist of the Department of Agriculture, Bulletin No. 1, United States Department of Agriculture, Division of Economic Ornithology and Mammalogy, Washington, 1889, p. 405 and map.

Bendire, Chas., 1892. "Passenger Pigeons in Michigan." "Smithsonian Contribution to Knowledge," Vol. XXVIII, p. 133. Gives summary of Mr. Wm. Brewster's researches in Northern Michigan; "Barn Owl, *Strix pratincola*, at Sault Ste. Marie," *ibid.* p. 325

Brayton, Alembert W., B. S., M. D. "A Catalogue of the Birds of Indiana, with Keys and Descriptions of the Groups of Greatest Interest to the Horticulturists." Transactions of the Indiana Horticultural Society. 1879, pp. 87 to 165 inclusive.

Boies, A. H., 1875. "Catalogue of the Birds Ascertained to Occur in Southern Michigan, Together with the Game and Fish Laws of Michigan and Miscellaneous Articles for Sportsmen." A pamphlet published by W. T. B. Schermerhorn, Hudson, Michigan. This is an annotated list of 211 species. The list claims to embrace only those species found in the southern portion of the Lower Peninsula.

Boies, A. H., 1876. "Additions to a Catalogue of Michigan Birds," Rod and Gun, Vol. XII, January 15, 1876, pp. 89 to 93.

Boies, A. H., 1884. "Stray Notes," A. H. Boies, Hudson, Michigan, "The Auk, Vol. II, pp. 285 to 291."

Boies, A. H., 1889. "Cowbird Living with English Sparrow," Ornithologist and Oölogist, Vol. IX, p. 128.

Brotherton, Wilfred A., 1891. "An Unexpected Fall," Ornithologist and Oölogist, Vol. XVI, p. 28. Refers to Shrike, Cuckoo, Mourning Dove, etc. "The Great Blue Heron," *ibid* pp. 90 and 91; "A Pair of Pugnacious Jays," *ibid*, p. 101; "The Rose-breasted Grosbeak in Oakland County, Michigan," *ibid*, Vol. XVII, p. 131.

Brewster, Wm., 1888. "The Present State of the Wild Pigeon, *Ectopistes migratorius*, as a Bird of the United States, with Some Notes on Its Habits," Auk, Vol. VI, Oct. 1889, p. 285. This is an account of a visit to central and northern Michigan in the spring of 1888, and gives the result of his observations on this species.

Brownell, W. C., M. D., 1890. "The Haunts of the Water Thrush," Ornithologist and Oölogist, Vol. XV, pp. 153 and 154.

Brownell, W. C., M. D., 1891. The least Bittern and Long-billed Marsh Wren at Mud Lake. Ornithologist and Oölogist, Vol. XVI, pp. 21 and 22.

Brownell, W. C., M. D., 1892. "Sandhill Crane in Michigan," Ornithologist and Oölogist, Vol. XVII, p. 156. Reported from Shiawassee county.

Brownell, W. C., M. D., 1892. "The Color Phenomena of the Little Screech Owl," Ornithologist and Oölogist, Vol. XVII, p. 105.

Ballou, W. H., 1879. "Ornithological Notes Along Detroit River," Oölogist, Vol. III, p. 57.

Butler, Amos W., 1890. "A Catalogue of the Birds of Indiana," illustrated. This is an annotated list of Indiana birds. It is very full and accurate, and reflects great credit upon its author and the state of Indiana. It contains 305 species and gives many references to Michigan birds. Transactions Indiana Horticultural Society, 1890. It is also published under separate cover by the author, at Brookville, Ind.

Butler, Amos W., 1892. Notes on Indiana Birds. Proceedings Indiana Academy of Science, 1891, Brookville, Ind., 1892. Notes the occurrence of the Prothonotary Warbler, *Protonotaria citrea*, in St. Joseph county, Mich.

Butler, Amos W., 1892. "Notes on the Range and Habits of the Carolina Parakeet," The Auk, Vol. IX, pp. 49 and 56. Mentions a species in the National Museum from Michigan; "Some notes concerning the Evening Grosbeak," *ibid*, pp. 238-247; "Notes its occurrence at Kalamazoo, 1869, 1873, 1878, 1879; Grand Rapids, 1869, 1874, 1879, 1887, 1888, 1889, 1890; Paw Paw, 1872; Petersburg, 1888, 1889; Alma, 1890; Olivet, 1890; Agricultural College, 1888, 1889; Ypsilanti, 1890, and Geddes, 1890.

Butler, Amos W., 1893. "Further Notes on the Evening Grosbeak," The Auk, Vol. X, 1893, pp. 155-157. Notes its occurrence in Washtenaw county in the fall of 1889, upon the authority of L. W. Watkins.

Cabot, J. E., 1850. "Report of the Birds Collected and observed at Lake Superior," Gould, Kendall & Lincoln, 59 Washington street, Boston, chapter 8. This list embraces sixty-nine species, and contains some rare northern forms.

Collins, W. H., 1875. "Notes on the Breeding Habits of some of the Water Birds of St. Clair Flats, Michigan," Bull. Orn. Club, Vol. V, p. 61. Notes two nests of *Aythya americana*, one nest of *Fulix marila*, and occurrence of *Fulix affinis*, *Hydrochelidon lariformis*, *Larus philadelphia*, and the nesting of the last.

Collins, W. H., 1778. "Notes on the Nesting of the Black Tern," *Oölogist*, Vol. IV, 1878. Nest reported from St. Clair Flats; "Breeding of *Podilymbus podiceps*," *ibid.*, Vol. V, p. 19, Sept., 1879. Nest reported from St. Clair Flats, and the eggs and young described; "Pomarine Jaeger in Detroit," *ibid.*, Vol. V, p. 24, 1879.

Collins, W. H., 1880. "Nesting of the Brant, Foster's and Wilson's Terns and Canvas-backed Duck," *Ornithologist and Oölogist*, Vol. V, 1880. Six nests found with eight to twelve eggs each. Observations were taken at St. Clair Flats; "Oölogical Notes," *ibid.* Vol. V, 1880.

Collins, W. H., 1881. "Those Brants," a correction, *Ornithologist and Oölogist*, Vol. VI, 1881.

Collins, W. H., 1882. "Sea Dove," *ibid.* Vol. VII, 1882, p. 111. A note of its capture in Michigan, Nov. 30, 1881.

Cook, A. J., 1872. "The Bird Friends of the Horticulturist," Report of State Pomological Society, 1872, p. 631.

Cook, A. J., 1874. "Birds destroying the Codling Moth," Report State Pomological Society, 1874, p. 159. Special mention is made of the Downy Woodpecker.

Cook, A. J., 1875. "Relation of Birds and Insects," Report of the Michigan State Pomological Society, 1875, p. 428.

Cook, A. J., 1875. "Birds as Insect Destroyers," Report of State Board of Agriculture, 1875, p. 277. Special reference is made to birds destroying white grubs and cut worms.

Cook, A. J., 1875. "Robins and Blackbirds," Report State Board of Agriculture, 1875, p. 61. A report of their value in destroying insects, especially white grub and cut worm, is given.

Cooley, Judge T. M., 1855. "A Plea for the Birds," Transactions of the State Agricultural Society, 1855, p. 17.

Corris, J. P. M., 1890. "A Series of the Eggs of the Golden-winged Warbler," *Ornithologist and Oölogist*, Vol. XV, pp. 21 and 22.

Coues, Dr. E., 1871. "Comments on Notes by B. Walker," Detroit, Mich., American Naturalist, 1871, pp. 437 and 438. Refers to Evening Grosbeak and Shore Lark.

Covert, A. B., 1876. "A Letter of Promise," Forest and Stream, Vol. XI, March 2, 1876, p. 52. This discusses our Michigan birds and the ability of birds to foresee atmospheric changes; "Birds of Lower Michigan," *ibid.* Vol. XI, 1876, pp. 99, 132, 163, 214, 266, Vol. VII, pp. 147, 164, 276, 318, 354 and 402. This list embraces 244 species with copious annotations.

Covert, A. B., 1876. "Nesting of the Solitary or Wood Tattler," *Oölogist*, Vol. II, 1876.

Covert, A. B., 1877. "Notes on Michigan Birds," Forest and Stream, Vol. VII, 1877.

Covert, A. B., 1877. "That Hybrid Owl," *Oölogist*, Vol. III, p. 97, 1877. *Bubo virginianus* and *Bubo virginianus arcticus*, both from Michigan, the latter from "north woods."

Covert, A. B., 1878. "Nesting of the Red-breasted Grosbeak," *Oölogist*, Vol. III, p. 50. Copied from Forest and Stream.

Covert, A. B., 1878. "Nesting of the Large-billed Water Thrush," The *Oölogist*, Vol. IV, pp. 10 and 11, April, 1878.

Covert, A. B., 1881. "Annotated List of Birds and Mammals of Washtenaw County Michigan," History of Washtenaw county, Michigan, 1881. This is a valuable addition to the various lists published in the state and embraces 252 species.

Covert, A. B., 1881. "The Enemies of Game Birds," Chicago Field, Vol. XVII. Dec. 8, 1881.

Daggett, Frank S., 1890. "Birds' Eggs on Isle Royal, Lake Superior," Ornithologist and Oölogist, Vol. XV, pp. 99 and 100. Refers to Gulls, Warblers, Hawks and Loons.

Davidson, W. A., 1892. "Nesting of Cardinal Grosbeak and Cerulean Warbler, near Detroit," Ornithologist and Oölogist, Vol. XVII, pp. 111 and 137; "Cerulean Warbler," *ibid.*, p. 137. Breeding near Detroit.

Dewey, L. H., 1888. "Birds of the Pine Wood in Northern Michigan," Report of State Board of Agriculture, 1888, p. 187. Mention is made of birds seen in a trip across the state through the pine forests.

Durfee, E. W., 1890. "Nesting of the Short-billed Marsh Wren," Ornithologist and Oölogist, Vol. XV, p. 156.

Dwight, Jonathan, Jr., 1890. "The Horned Larks of North America," The Auk, Vol. VII, pp. 138 and 159. Notes specimens from Ann Arbor and Cadillac and breeding from the last place.

Eddy, N. A., 1882. "Black-backed Woodpecker in Michigan," Ornithologist and Oölogist, Vol. VII, p. 143, 1882; "Black-backed Woodpecker in Michigan," Ornithologist and Oölogist, Vol. VII, No. 181, 1882, p. 143; "Michigan Notes on Birds," *ibid.*, Vol. IX, 1883, p. 4.

Eddy, N. A., 1884. "Michigan Notes," Ornithologist and Oölogist, Vol. IX, 1884, pp. 4 and 5. Notes on Bald Eagle, Carolina Rail, Herring Gull, Bonaparte's Gull, Common Tern, Black-backed Woodpecker, and Surf Duck; "Bird Notes from Bay City," *ibid.*, p. 41.

Fluher, Rev. Chas., 1886. "Ruthless Destruction of Birds," Report State Horticultural Society, 1886, p. 355. A record is given of the tremendous destruction of birds to be used ornamentally and suggestions given to prevent it.

Forbes, Prof. S. A., 1881. "Birds and Canker Worms," report of State Horticultural Society, 1881, p. 203. This valuable article records investigations of many of our most common birds which were found feeding upon the Canker Worm. Per cent of insect food is given in each case.

Fox, Rev. Chas., 1853. "Published List of the Birds of Michigan." Said to include 212 species. I have been unable to secure this list.

Gibbs, Dr. Morris, 1875. "Our Northern Mockingbird, Catbird," *Galeoscoptes carolinensis* (Linn.) Caban, Kalamazoo Telegraph, July, 1875. This is a simple biography.

Gibbs, Dr. Morris, 1876. "Tenacity of Life in Animals," Kalamazoo Gazette, 1876. Refers largely to birds.

Gibbs, Dr. Morris, 1877. "Voyage on the Kalamazoo River from Kalamazoo to the Mouth," Kalamazoo Telegraph, Aug. 24 and 26, 1877. A record of the birds and mammals was kept by Gibbs and Tuthill; "Breeding Habits of *Myiodioctes mitratus*" (Gmel.) Aud. Naturalist and Fancier, Vol. I, No. 8, p. 31, 1877. The above paper was published monthly by C. W. Gunn, Grand Rapids, Mich., from 1877 to 1879.

Gibbs, Dr. Morris, 1878. "Breeding Habits of the Golden-winged Warbler," *Helminthophaga chrysoptera* (Linn.) Baird, Naturalist and Fancier, Vol. II, No. 3; "A list of the Warblers taken in the State," *ibid.*, Vol. II, No. 2. This gives 28 species with notes.

Gibbs, Dr. Morris, 1879. "Annotated List of Birds of Michigan," Bull. of the U. S. Geographical and Geological Survey of the Territories, Vol. V, No. 3, Art. XXIV, pp. 481 to 497 inclusive. This embraces 309 species, states whether each species is rare or com-

mon, whether it breeds or is a transient or migrant and where it is found. It is, considering its early date, very accurate and complete.

Gibbs, Dr. Morris, 1879. "A New Bird," Grand Rapids Democrat, June 1, 1879. This article treated of a supposed new bird, *Helminthophaga gunnii* Gibbs. It proved to be *Helminthophaga leucobronchialis*.

Gibbs, Dr. Morris, 1879. "Breeding Habits of the Great Blue Heron, *Ardea herodias* Linn." Naturalist and Fancier, Vol. III, No. 1, 1879. This records a visit to a large herony; "The Evening Grosbeak," *ibid.*, Feb. 1879.

Gibbs, Dr. Morris, 1879. "Rambles of a Naturalist," Kalamazoo Telegraph, May, 1879. This describes several species including Connecticut Warbler and Olive-sided Flycatcher, and gives the breeding habits of several rare species.

Gibbs, Dr. Morris, 1883. "Hibernation of Swallows," Portland (Me.) Transcript, July, 1883.

Gibbs, Dr. Morris, 1883 and 1884. "Ornithology of Michigan," Michigan School Moderator 1883-4. Several articles commencing Vol. IV, No. 11, Nov. 15, 1883, and extending to Vol. V, Feb. 2, 1884.

Gibbs, Dr. Morris, 1884. "The genus Empidonax," the American Field, Vol. XXI, No. 10, March 8, 1884, p. 232. This is a description of the four small Flycatchers of Michigan. The paper was read before the Ridgway Ornithological Club at Chicago.

Gibbs, Dr. Morris, 1884. "Michigan Notes," The Ornithologist and Oölogist, Vol. IX, 1884, pp. 66, 67, 68. Discusses nesting habits of Hawks, Owls, Thrushes, and other Michigan birds; "Song of the Golden-crowned Thrush," *ibid.*, Vol. IX, p. 191.

Gibbs, Dr. Morris, 1884. "The Game Birds as Insect Destroyers." Many species of birds of economic importance to man are listed. This paper was read before the Michigan Sportsmen's Association and published in the Transactions of that society.

Gibbs, Dr. Morris, 1885. "The Genus *Helminthophaga*," American Field, Vol. XXIII, 1885, Jan. 3d, p. 8. This paper was read before the Ridgway Ornithological Club of Chicago, and describes six Michigan species; "The Family Picidæ in Michigan," *ibid.*, Vol. XXIII, p. 415. A review of the nine species recorded from the state; "The Genus *Vireo* in Michigan," *ibid.*, Vol. XXII, p. 200. The six species that occur in the state are reviewed; "Nomenclature of Limicolæ of Michigan with Annotations." Read before the Michigan Sportsmen's Association of Feb. 18, 1885, and published in the Transactions of that society.

Gibbs, Dr. Morris, 1885. "A Catalogue of the Birds of Kalamazoo County," Ornithologist and Oölogist, Vol. X, pp. 54, 68, 86, 118, 133, 149, 166 and 189.

Gibbs, Dr. Morris, 1885. "The Birds of Michigan," Forest and Stream, Vol. XXIV, pp. 5, 26, 44, 65, 104, 125, 184, 267, 288, 307 and 387; *ibid.*, Vol. XXV, pp. 4 and 304; *ibid.* Vol. XXVI, p. 305; *ibid.*, Vol. XXVII, pp. 123 and 223. This list has elaborate annotations and continues irregularly to Oct. 14, 1886.

Gibbs, Dr. Morris, 1886. "Kalamazoo County (Michigan) Notes," Ornithologist and Oölogist, Vol. XII, p. 22. Many northern birds were observed in December with a suggestion that this may indicate a severe winter; "The Swallows Have Come," *ibid.*, p. 72. A poem; "How Birds Breathe," *ibid.*, Vol. XIII, pp. 97 and 98. Note is made of a peculiar instance illustrating abnormal conditions.

Gibbs, Dr. Morris, 1887. "Kalamazoo County Notes," Ornithologist and Oölogist, Feb., 1887. Discusses the ability of birds to endure severe weather.

Gibbs, Dr. Morris, 1888. "Caprimulgidæ of Michigan," Geological Gazette, July, 1888.

Gibbs, Dr. Morris, 1888. "Family Rallidæ in Michigan." *Oölogist*, Vol. IV, pp. 85 to 88; "The Great Northern Diver," *ibid.*, July, 1888.

Gibbs, Dr. Morris, 1888. "Birds' Songs," *Oölogist Exchange*, Sept., 1888; "The Hooded Warbler," *ibid.*, 1888.

Gibbs, Dr. Morris, 1888. "Foot Movements in Birds," *Hawkeye. Ornithologist and Oölogist*, July, 1888.

Gibbs, Dr. Morris, 1888. "The Effects of Anaesthetics," *Agassiz Record*, June, 1888. Refers to birds.

Gibbs, Dr. Morris, 1889. "Winter Birds of Kalamazoo County," *Oölogist*, Oct., 1889, pp. 187-189. Includes 68 species; "Raptores of Michigan," *Oölogist*, Vol. VI, 1889, pp. 67 to 69.

Gibbs, Dr. Morris, 1889. "The American Bittern," *Ornithologist and Oölogist*, Vol. XIV, Aug., 1889, p. 120.

Gibbs, Dr. Morris, 1889. "The Crossbills of Michigan," *Old Curiosity Shop*, Feb, 1889; "The Mourning Warbler in Michigan," *ibid.*, Feb. and March. 1889.

Gibbs, Dr. Morris, 1890. "A Very Peculiar Bird," *Ornithologist and Oölogist*, Jan., 1890. The habits and character of the Cowbird are described.

Gibbs, Dr. Morris, 1890. "Game Birds of Michigan," *Fish and Game Warden*, Aug. to Nov, 1890.

Gibbs, Dr. Morris, 1890. "Yellow Rail," *Oölogist*, Nov. 1890. Described as a rare Michigan bird.

Gibbs, Dr. Morris, 1890. "Snipe and Snipe Shooting," *Shooting and Fishing*, (Boston), Sept. 11, 1890. Discusses the nesting and feeding of Snipes; "A Wild Pigeon Hunt," *ibid.*, Nov. 20, 1890. The extinction of the pigeon is discussed.

Gibbs, Dr. Morris, 1890. "The White Pelican taken in Michigan," *Forest and Stream*, Vol. XXXVII, p. 296.

Gibbs, Dr. Morris, 1891. "The American Cuckoos," *Nature's Realm*, April, 1891. Nesting habits of the Woodcock described.

Gibbs, Dr. Morris, 1892. "The Bird in its Nest," *Science*, Aug. 19, 1892; "Acorn Eating Birds," *ibid.*, Sept. 2; "The Effects of Civilization on our Birds," *ibid.*, Sept. 30; "Birds that Sing in the Night," *ibid.*, Dec. 2; "The Humming Bird's Food," *ibid.* Oct. 28.

Gibbs, Dr. Morris, 1892. "Bird Life in a City Yard," *Forest and Stream*, Oct. 28, 1892. Of a list of one hundred and thirty-four species of birds, nineteen were found nesting in a city lot, five by twelve rods in size; "A Habit of the Robin," *ibid.*, Oct. 20, 1892.

Gibbs, Dr. Morris, 1892. "A Flight of Hawks," *American Field*, Oct. 8, 1892; "The Night Hawk," *ibid.*, Oct. 15, 1892.

Gibbs, Dr. Morris, 1892. "The Kingfisher. The Angler's Companion," *American Angler*, July, 1892.

Gibbs, Dr. Morris, 1892. "The Electric Destroyer," *Detroit Free Press*, Sept. 15, 1892. Discusses killing of birds and insects about electric lights.

Gibbs, Dr. Morris, 1893. "The American Osprey," *Oölogist*, Feb. 1893. "Michigan Herons," *ibid.*, March, 1893; seven species described and their nesting habits given.

Gibbs, Dr. Morris, 1893. "The Arrangements and Number of Eggs in the Nest," *Science*, Vol. XXI, pp. 148. The nesting habits of many Michigan birds are referred to.

Gibbs, Dr. Morris, 1893. "The Pine Grosbeak in Michigan," *Ornithologist and Oölogist*, Vol. XVIII, 1893, pp. 39 to 41.

Gibbs, Dr. Morris, 1893. "Birds Which Nest in Cavities and Burrows;" illustrated. Speaks of many species; Swallows, Woodpecker, Kingfisher, Blackbird, and many rare examples. Scientific American, Vol. IV, p. 8, 1893.

Gunn, Chas. W., 1876. "The Wild Pigeon, *Ectopistes migratorius*," The Oölogist, Vol. II, 1876.

Gunn, Chas. W., 1877. "The Red-Poll, *Aegiothus linaria* Cab., and Snow Bunting, *Plectrophanes nivalis* Meyer," Naturalist and Fancier, Vol. I, No. 1, 1877; "The Evening Grosbeak, *Hesperiphona vespertina* Bp.," *ibid.*, Vol. I, 1877; "The Pine Grosbeak, *Pinicola enucleator* Cab.," *ibid.*, Vol. I, No. 3, 1877; "Winter Notes on the Birds of Kent County, Michigan," *ibid.*, Vol. I, 1877. Thirty-six species with annotations; "Arrival of Birds at Grand Rapids," *ibid.*, Vol. I, 1877; "Nesting Habits of the Shore Lark, *Eremophila alpestris* Boie.," *ibid.*, Vol. I, 1877; "Birds in Winter," *ibid.*, Vol. I, 1877; "The Canada Goose," *ibid.*, Vol. I, 1877.

Gunn, Chas. W., 1878. "Items from Michigan," Western Oölogist (Wis.), Vol. I, No. 5, 1878. Notes on birds; "Nesting Habits of Warblers," *ibid.*, Vol. I, 1878. Describes the nests and eggs of Black-throated Blue, and Golden-winged Warblers; "Notes on the Wild Pigeon," *ibid.*, Vol. I, 1878.

Gunn, Chas. W., 1878. "The Western Loggerhead, White-rumped Shrike, *Collyrio excubitorides*," Naturalist and Fancier, Vol. II, 1878; "The Evening Grosbeak," *Hesperiphona vespertina*, Bp.," *ibid.*, Vol. III, 1874.

Gunn, Chas. W., 1879. "Rare Birds of Michigan," Bull. Nutt. Orn. Club, Vol. IV, p. 186. Notes captures of Connecticut Warbler in Michigan.

Gunn, Chas. W., 1879. "Rare Birds in Michigan," Bulletin Nutt. Orn. Club, Vol. IV, 1879.

Gunn, Chas. W., 1881. "Woodpeckers of Michigan," Agricultural World (Grand Rapids), Vol. XIV, 1881. An annotated list; "Notes on the Winter Birds of Kent County, Michigan," *ibid.*, Vol. IV, 1881. This excellent list is a marked improvement on the list of 1877; "Additional Notes on the Winter Birds of Kent County, Michigan," *ibid.*, Vol. IV, 1881.

Gunn, Chas. W., 1881. "Arrivals," Ornithologist and Oölogist, Vol. VI, 1881. Embraces notes on spring migrants.

Gunn, Chas. W., 1886. Obituary notice of, Ornithologist and Oölogist, Vol. XI, p. 73.

Hatch, Dr. P. L., 1890. "American Coot, Breeds at St. Clair Flats," Notes on Birds of Minnesota, 1892, p. 162.

Hatch, Dr. P. L., 1890. "Great Gray Owl," "Notes on Birds of Minnesota," 1890, p. 211. Its habitat in Michigan is noted.

Hazelwood, J. H., 1890. "Evening Grosbeak in Michigan," Ornithologist and Oölogist, Vol. XV, p. 96. Records its capture at Fort Gratiot, May 17, 1890.

Hewett, Alexander, 1880. "Birds Should be Fostered," Report State Pomological Society, 1880, p. 4.

Hollister, Geo. C. 1886. "Albino Robin at Grand Rapids," Ornithologist and Oölogist, Vol. XI, p. 118.

Hughes, D. Darwin, 1869. "Birds Calhoun County," Marshall Democrat Expounder, 1869. This embraces 179 species; "The Bobolink," *ibid.*, May 5, 1870; "The Wild Turkey," Detroit Free Press, Jan. 24, 1870; "The Sora Rail," *ibid.*, March 16, 1870; "The Different Species of the Plover Family," *ibid.*, Apr. 3, 1870; "The Ruffed Grouse," *ibid.*, Oct. 7, 1870; "Song Birds of Michigan," *ibid.*, Feb. 12, 1871; "The Robin, Blue-bird and Catbird," *ibid.*, Feb. 19, 1871; "The Pinnated Grouse or Prairie Chicken,

Cupidonia cupido," *ibid.*, March 24, 1871. The following species were also described by Mr. Hughes in the Free Press for 1871, special date unknown: The American Quail, Field Sparrow, the smaller Thrushes, Brown Thrush, Wilson's Snipe, American Woodcock, Wood Thrush, and Song Sparrow. This whole series of articles is very excellent.

Hughes, D. Darwin, 1870. "The Wild Turkey, Its Origin and Habits," The Moderator (Michigan school paper, published at Grand Rapids). Vol. IV, No. 19, p. 373. This is a reprint of article in Free Press for Jan. 24, 1870.

Hughes, D. Darwin, 1872. "Michigan Birds, Their Relation to Agriculture," Report of the Michigan Pomological Society, 1872, p. 442. This discusses our bird friends and includes the Hawks and others which are often condemned.

Hughes, Walter H, 1871. "Arrival and Departure of the Snow Bunting, *Plectrophanes nivalis* (Linn.) Meyers, from 1867 to 1871," Naturalist and Fancier (Grand Rapids), Vol. I, No. 11, 1877. Extract from the notes of his father, Hon. D. D. Hughes; "*Chrysomitris tristis*" Bp., *ibid.*, Vol. II, No. 1, 1878; "The Michigan Plover," *ibid.*, Vol. II, No. 3, 1878, a reprint of an article by Hon. D. D. Hughes.

Hughes, Walter H., 1878. "Birds of Michigan," Valley Naturalist (St. Louis, Mo.), Vol I, 1878, pp. 11, 14, 15, 34 and 35. This is an annotated list.

Judson, R. F., 1892. "Brief Notes," Ornithologist and Oölogist, Vol. XVII, p. 9. Notes Golden Eagle taken in Kalamazoo, Michigan, Jan. 1, 1892.

K. D. H., 1886. "The Bald Eagle at Sturgis, Michigan," Ornithologist and Oölogist Vol. IX, p. 75.

Kneeland, Dr. S. Jr., 1857. "Birds of Keweenaw Point," Boston Society of Natural History. Vol. VI, 1857, pp. 231 to 241 inclusive. This list was made as the result of one year's study during a residence at Portage Lake and is undoubtedly very accurate and reliable. It includes 147 species.

Kennicott, R., 1861. A Catalogue of the Trowbridge Collection of Natural History in Michigan University Museum." Pamphlet of thirty-two pages published by University at Ann Arbor, 1861.

Langille, Rev. J. H., 1886. "Nidification of Birds on the St. Clair Flats," Bull. Buffalo Society of Natural Sciences, Vol. V, No. 1., 1886, pp. 33 to 39. Treats chiefly of water birds; "American Coot, *Fulica Americana*," *Our Birds and Their Habits*, pp. 405 and 406. Gives breeding habitat along the great lakes, and says it is the characteristic bird of the St. Clair Flats.

Lawrence, Robt. B. "Brant in Michigan," Forest and Stream, Vol. 32, p. 316.

Lockwood, E. A., 1891. "Snowy Owls and Swans taken at South Haven." Ten owls and two swans taken in December. American Field, Vol. XXVII.

Lucius, E. Torrey, 1883. "The English Sparrow," Agricultural World, Grand Rapids, Vol. IX, No. 4.

McBride, Herbert W., 1893. Letter, Ornithologist and Oölogist, Vol. XXIII, 1893, p. 47. Notes breeding of Rose-breasted Grosbeak in Berrien county, Mich.

Maris, Willard L., 1891. "The Rose-breasted Grosbeak in Washtenaw county, Oölogist, Vol. XVI, p. 106.

Merriam, Dr. C. Hart, 1883. "Kirtland's Warbler from the Straits of Mackinaw," The Auk, Vol. I, p. 376. Mentions several birds received from Wm. Marshall, keeper of lighthouse at Spectacle Reef, Michigan, killed night of May 21, 1883. Among them was a male, Kirtland's Warbler.

Miles, Dr. M., 1861. "Catalogue of Birds of Michigan," Geological Survey of Michi-

gan, pp. 222 to 232 inclusive. There are 203 species embraced in this list, which illustrates the characteristic accuracy of its author.

Milliken, W. E., 1892. "Nesting of a Chimney Swift in a Freight Car," *Ornithologist and Oölogist*, Vol. XVII, p. 159; "The Rose-breasted Grosbeak in Michigan," Vol. XVII, p. 152. Reported quite common in Kent county.

Mills, M. B., 1891. Set of ten eggs from White-breasted Nuthatch, taken at Macon, Michigan," *Ornithologist and Oölogist*, Vol. XVI, p. 157.

M., 1867. "Nesting of Pigeons at Shelby, Michigan," *Forest and Stream*, Vol. XIV, pp. 231-232. Describes a pigeon roost.

Moseley, E. L., 1881. "Notes on Winter Birds of Michigan," *Forest and Stream*, Vol. XXVIII, p. 4. Six species are mentioned.

Moseley, E. L., 1885. "Winter Woodpeckers of Michigan," *Forest and Stream*, Vol. XXXII, p. 63.

Moseley, E. L., 1887. "List of Michigan Birds in the Museum of the Kent Scientific Institute, Grand Rapids, Michigan." This list embraces 231 species, but not all are Michigan birds. This is a pamphlet of 32 pages and was published by the Democrat Company of Grand Rapids.

Nichols, Jason E., 1882. "Black-backed Three-toed Woodpecker in Michigan," *Ornithologist and Oölogist*, Vol. VI, 1882.

Oldfield, W. A., 1891. "Breeding of Rose-breasted Grosbeak and Red-backed Sandpiper in Sanilac County, Michigan," *Ornithologist and Oölogist*, Vol. XVI, p. 144.

Purdie, H. A., 1879. "Record and Additional Specimens of the White-throated Warbler," *Bull. Nutt. Orn. Club*, Vol. IV, No. 3, 1879; "Another Kirtland's Warbler, *Dendroica kirtlandi*." Mentions two of the nine specimens then known as from Michigan, having been taken by Adolphe B. Covert, *ibid.*, p. 105.

Purdy, J. B., 1889. "Nesting of the Barred Owl and Great Horned Owl at Plymouth, Michigan," *Ornithologist and Oölogist*, Vol. XIV, p. 54; "Curious Nesting Traits of Birds," *ibid.*, p. 92; "Nests that Perished in the Storm," *ibid.*, p. 110.

Purdy, J. B., 1890. "Horned or Prairie Horned Lark, Which is it?" *Ornithologist and Oölogist*, Vol. XV, pp. 138 and 139.

Purdy, J. B., 1891. "Late Nesting of the Wood Pewee," *Ornithologist and Oölogist*, Vol. XVI, p. 28; "Nesting of the Bob White, August 30, 1891," *ibid.*, p. 157.

Purdy, J. B., 1892. "Late Nesting of the Great Horned Owl," *Ornithologist and Oölogist*, Vol. XVII, p. 57. Nest found March 20, 1892.

Purdy, James B., 1893. "Domestication of the Canada Goose," *Ornithologist and Oölogist*, Vol. XVIII, 1893, pp. 4-5.

Raeder, S., 1891. "Correspondence from *Ornithologist and Oölogist*," Vol. XVI, p. 64. Records taking 21 sets of eggs of Cardinal in Ohio, in 1885; also notes food habits of the crow. A crow darted down and carried off a young chicken.

Reed, Leon, 1886. "Supposed Breeding of the Barred Owl at White Pigeon, Michigan," *Ornithologist and Oölogist*, Vol. XI, p. 100.

Ridgway, Robt., 1879. "Note on *Helminthophaga gunnii* Gibbs," *Bull. Nutt. Orn.*, Vol. IV, No. 4, 1879.

Ridgway, Dr. Robert, 1883. "*Helminthophila leucobronchialis*," *The Auk*, Vol. I, pp. 359 and 363. Notes a specimen taken by Gunn, Ottawa county, May 25, 1879; "Another Kirtland's Warbler from Michigan," *ibid.*, p. 389. Specimen from collection of N. Y. Greene, Battle Creek, Michigan, May 11, 1883.

Ridgway, Dr. Robert, 1889. "Natural History Survey of Illinois," State Laboratory

of Natural History, S. A. Forbes, director; Descriptive Catalogue, Springfield, Ill., 1889, illustrated. Refers to many Michigan birds.

Sager, Dr. Abr., 1839. Catalogue of Michigan Birds, by Dr. Abr. Sager, Michigan House Documents, 1839, pp. 412 to 417 inclusive. This catalogue embraces 164 species. This list was evidently prepared with great care and is without doubt very reliable.

Satterlee, Prof. James, 1877. "Our Friends, the Birds," Report of Michigan Pomological Society, 1887, p. 115. This article discusses birds in relation to their economic importance.

Satterlee, Prof. James, 1886. "The Cherry Bird Condemned," State Horticultural Society, 1886, p. 97.

Saunders, Prof. Wm., 1883. "Condemns the Robin, Cherry Bird and English Sparrow," Report of Michigan Horticultural Society, 1883, p. 164.

Schoolcraft, Henry R., 1834. "A Supposed New Bird," Historical and Scientific Sketches of Michigan. Discovered in Michigan in the forests at the foot of Lake Superior. The bird was identified by the New York Scientific Association as the Evening Grosbeak, *Hesperiphona vespertina* (Coop.) Bp.

Smith, W. A., 1885. "The Birds Our Friends," Report of State Horticultural Society, 1885, p. 249.

Spicer, Samuel, 1889. "Notes from Goodrich, Genesee County, Michigan," Ornithologist and Oölogist, Vol. XIV, p. 43. Notes some rare birds, Robin building in a barn, and nest of Goldfinch taken Sept. 28.

Steere, Dr. J. B., 1880. List of Birds of Michigan, Report of State Pomological Society, 1880, pp. 115 to 124 inclusive. The birds are classified according to time of appearance into summer sojourners, winter residents, migrants or transients, and those that live here throughout the year. The list embraces 265 species.

Steere, Dr. J. B., 1880. "Migration of Birds," Report of State Pomological Society, 1880, p. 115. This article divides birds into groups, as to time of residence in the State and embraces a list of 265 species.

Steere, Dr. J. B., 1880. "List of the Mammals and Birds of Ann Arbor and Vicinity," local paper, Ann Arbor, Michigan. Annotated list of 111 species.

Strang, J. J., 1855. "Natural History of Beaver Islands, Michigan," ninth annual report Smithsonian Institution (1854), 1855, pp. 282 to 288. A brief mention of three lines is made of birds.

Sudworth, Geo. B., 1878. "Poliophtila cærulea (Linn.) Scf.," Naturalist and Fancier, (Grand Rapids), Vol. II, No. 3, 1878.

Swales, B. H., 1891. "Notes on Birds at Detroit," Ornithologist and Oölogist, Vol. XVI, p. 144. Nests found of Red-headed Woodpecker and Woodcock, the former with eight eggs, the latter with four; "Nesting Notes in the Vicinity of Detroit," *ibid.*, pp. 148-9. Dates and nesting habits of Michigan birds; "Notes of the Season," *ibid.*, p. 159.

Swales, B. H., 1892. "Brief Notes," Ornithologist and Oölogist, Vol. XVII, p. 75. Gives notes of the winter; "Rose-breasted Grosbeak in Wayne County," *ibid.*, p. 64. "American Long-eared Owl Breeding in Wayne County, Michigan," *ibid.*, p. 75; "Brief Notes," *ibid.*, p. 79; Bald Eagle at Detroit April 4, and Eggs of Red-shouldered Hawk taken April 13, "Nesting of Virginia Rail at St. Clair Flats," *ibid.*, p. 103; "Nesting of Phoebe," *ibid.*, p. 111; "Albino Eggs of the Long-billed Marsh Wren," *ibid.*, p. 121; "Nesting of the Field Sparrow in Michigan. found Nesting August 2," *ibid.*, p. 159; "Notes on Tame Red-shouldered Hawk," *ibid.*, p. 159.

Trombley, Jerome, 1882. "Swallow-tailed Kite taken in Southern Michigan," Bull. Nutt. Orn. Club, Vol. VII, p. 250. Notes a male and female near Petersburg, June 19, 1882.

Wade, Joseph M., 1880. "Orange-crowned Warbler," Oölogist, Vol. V, 1880. Note of capture in Michigan.

Washburn, F. L. "Recent Captures of Kirtland's Warbler in Michigan and Other Notes," The Auk, Vol. VI, pp. 279 to 280.

Waters, Dudley E., 1883. "The English Sparrow. *Passer domesticus*," Agricultural World (Grand Rapids), Vol. IX, No. 4.

Weed, Prof. C. M., 1883. "Food Habits of Young Birds," Report of the State Board of Agriculture 1883, p. 439. This is a part of a thesis for degree of Master of Science and shows the value of birds as insect destroyers.

Weed, Prof. Clarence M., 1884. "The Food Relations of Birds, Frogs and Toads," Report Michigan Horticultural Society, 1884, p. 98. This gives the percentage of insect food of many young birds, determined by actual dissection. Embraced in thesis for the degree of Master of Science.

Wolcott, Robt. H., 1884. "Notes from Grand Rapids, Michigan," Ornithologist and Oölogist, Vol. IX, p. 62. Refers to early spring birds.

Wood, A. H., 1884. "The Black-backed Woodpecker," Ornithologist and Oölogist, Vol. IX, p. 62. Species noted 30 miles north of Mackinaw.

White, S. E., 1890. "Brown Creeper at Grand Rapids, Michigan," Ornithologist and Oölogist Vol. XV, pp. 101-102; "Favors the Old Names," *ibid.*, p. 137; "Two Days in the Field," *ibid.*, pp. 173-174. Notes on the birds of Mackinac Island.

White, S. E., 1891. "The Picidæ of Michigan," Ornithologist and Oölogist XVI, pp. 56-59; "Stupid Bird Laws of Michigan," *ibid.*, p. 92; "A Pleasant Disappointment," *ibid.*, pp. 100-101. An account of a visit to a heronry and other bird notes; "Turkey Buzzard Breeding in Michigan," *ibid.*, p. 141. Notes the breeding of this and other species along the Kalamazoo river; "Winter Birds with Dates," *ibid.*, p. 149.

White, S. E., 1892. "The Olive-backed Thrush," Ornithologist and Oölogist, Vol. XVII, pp. 114-115. Notes from Kent county and Mackinac Island.

BIRDS OF MICHIGAN.

ORDER PYGPODES. DIVING BIRDS.

SUBORDER PODICIPEDES. GREBES.

FAMILY PODICIPIDÆ. GREBES; HELL-DIVERS.

These curious birds are mostly confined to the water and are great divers said to dodge even the rifle ball.

GENUS ÆCHMOPHORUS COUES.

1-1-(845). *Æchmophorus occidentalis* (Lawr.). WESTERN GREBE.

Very rare; probably accidental; one specimen killed near Lansing and now in the collection of Mr. C. H. Davis; one specimen reported in catalogue of "Kent Scientific Institute" by E. L. Mosley; included in "Butler's Birds of Indiana."

GENUS COLYMBUS LINN.

2-2-(847). *Colymbus holboëllii* (Reinh.). RED-NECKED GREBE; HOLBELL'S GREBE.

Very rare; migrant; we have one from Saginaw bay; "one taken by Prof. Smith at Hillsdale, in the spring of 1890, and now in the Hillsdale College museum" (F. M. Falconer); taken by S. E. White off Mackinac Island; "taken occasionally at Sault Ste. Marie" (C. S. Osborn). This species is included in the list of Fox and in that of Dr. A. Sager of 1839.

3-3-(848). *Colymbus auritus* Linn. HORNED GREBE.

Common throughout the state; "one taken Feb. 26, 1892, snow bound in Pittsford, township, Hillsdale county" (A. H. Boies). Fall and spring; migrant; occasional in summer; "northern U. S." (Jordan); "Iron Mountain, May 18, 1890" (E. E. Brewster); "Keweenaw Point," (Kneeland); breeds; nests in May, on bogs in marshes; "breeds in Wayne county" (B. W. Swales); a fine male was taken by J. B. Purdy at Plymouth; "rare transient in Kalamazoo county in spring and autumn" (Dr. M. Gibbs); "rivers of Michigan" (Davie's Nests and Eggs of North American Birds, p. 3); eggs, five to nine, immaculate, yellowish, smooth; "breeds among the lakes and marshes of northern Indiana in considerable numbers" (Butler's Birds of Indiana).

GENUS *PODILYMBUS* LESS.

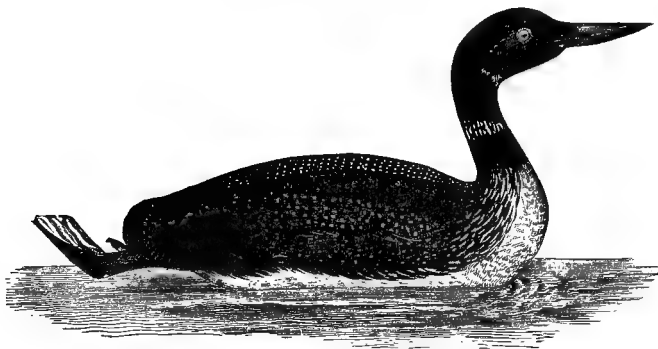
4-6-(852). *Podilymbus podiceps* (Linn.). *PIED-BILLED GREBE; CAROLINA GREBE; HELL-DIVER; WATER-WITCH; DIPPER; DIDAPPER; DABCHICK.

Very common "throughout the state and easily shot by the skillful hunter" (A. H. Boies); April till fall; "Monroe county" (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Iron Mountain, Dickinson county," (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests as in last species; "found breeding on St. Clair Flats" (W. H. Collins, Oölogist, Vol. V. p. 19); "Geo. Sprague, of Kalamazoo, secured thirty-two eggs in a half day, about ponds and lakes" (Dr. M. Gibbs); eggs, five to nine, rough, dirty yellowish white. The nest of this species often floats. This queer tailless bird is the cause of many stories told by hunters. They report that it will dodge a bullet as the most skillful hunter seldom takes one. It certainly might and generally would dive even after receiving a mortal wound. Prof. James Satterlee, Greenville, writes me: "This comes from the habit of diving so quickly after the flash of the gun. I shot five in one day with my rifle." Geo. D. Sones writes: "They dive at sight of flash, and so escape the bullet," as he has actually observed many times.

SUBORDER CEPPHI. LOONS AND AUKS.

FAMILY URINATORIDÆ. LOONS.

These are pre-eminent water birds, noted for swimming and diving.

 GENUS *URINATOR* CUV.


Loon.

5-7 (840). *Urinator imber* (Gunn.). *Loon; Great Northern Diver.

Very abundant in spring, summer and autumn; throughout the state; "Grand Traverse Co." (Dr. M. L. Leach); "nests have been found in Washtenaw Co. on muskrat houses about marshy lakes," (L. W. Watkins); "Common on Lake Erie and Raisin River" (Jerome Trombley); "Mackinac Island" (S. E. White); "Common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds plenteously; nests in May, in marshes, on large masses of grass, sedges, etc.; eggs two, very rarely three, elongate, olive brown or drab, spotted with darker, often almost black markings; seen

* All species starred, are reported from Locke, Ingham County, by the late Dr. H. A. Atkins.

in winter; "will carry their young on their backs, even when flying from one lake to another for two miles" (A. H. Whitehead). Dr. Atkins took several of these birds in March and April. I have taken them, or seen them, in nearly all seasons of the year.

6-9-(842). *Urinator arcticus* (Linn.). BLACK-THROATED LOON; BLACK-THROATED DIVER.

Exceedingly rare; Lake Michigan; winter; "occasionally on Lake Michigan" (Gibbs' Birds of Mich.); "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland).

7-11-(844). *Urinator lumme* (Gunn.). RED-THROATED LOON; RED-THROATED DIVER.

Rather common; "throughout the state, have taken several alive on snow in winter" (A. H. Boies); winter; migrates north in spring; found on lakes and rivers in all parts of the state; "almost a yearly visitor in Kalamazoo Co." (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "found breeding at Green Bay, Wis." (Prof. Ludwig Kumlein); "breeds in Arctic regions" (Dr. A. K. Fisher).

FAMILY ALCIDÆ. THE AUKS.

These curious water birds are specially marine and it is doubtful if they belong to our fauna; if ever seen here they are undoubtedly wanderers.

GENUS FRATERCULA BRISS.

8-13-(854). *Fratercula arctica* (Linn.). COMMON PUFFIN.

"Rare straggler" (Gibbs' Birds of Michigan); "have never heard of one on Lake Superior" (C. S. Osborn). I think this of doubtful occurrence in Michigan.

GENUS SYNTHLIBORAMPHUS BRANDT.

9-21-(864). *Synthliboramphus antiquus* (Gmel.). ANCIENT MURRELET; BLACK-THROATED MURRELET.

Prof. Ludwig Kumlein writes me that he has taken one specimen at Lake Koshkonong, Wis., and one on Lake Michigan. One was shot late in October by Rev. G. E. Gordon on Lake Koshkonong, Wis. (Geo. B. Sennett in *The Auk* for January, 1884). Coues says one straggler taken in Wisconsin.

GENUS CEPPHUS PALL.

10-27-(871). *Cephus grylle* (Linn.). BLACK GUILLEMOT.

"Not rare in Upper Peninsula, occasional seasons" (Dr. M. Gibbs); "may occur as a rare straggler" (Prof. Ludwig Kumlein); "very rare even as an accidental visitor" (C. S. Osborn).

GENUS URIA BRISS.

11-30-(874). *Uria troile* (Linn.). MURRE.

"Occasionally taken on Lake Superior" (Gibbs' Birds of Michigan). I think this a doubtful Michigan bird; "so do I--also all the other Alcidae" (Robt. Ridgway).

GENUS ALCA LINN.

12-32-(877). *Alca torda* Linn. RAZOR-BILLED AUK.

"Irregular visitor to Northern Peninsula" (Gibbs' Birds of Michigan); "I have heard of one captured, but even this is not well authenticated" (C. S. Osborn); "the

chances are one hundred to one against the five preceding species appearing in Michigan even as wanderers, especially is this true of *Fratercula arctica*" (Prof. J. A. Allen); "I concur with Prof. Allen" (A. H. Boies).

GENUS ALLE LINK.

13-34-(863). *Alle alle* (Linn.). SEA DOVE; DOVEKIE, ALLE.

The late W. H. Collins reported killing one on Detroit River, Nov. 30, 1881, (O. and O. 4, Vol. VII, p. 111).

ORDER LONGIPENNES. LONG-WINGED SWIMMERS.

FAMILY STERCORARIIDÆ. SKUAS AND JAEGERES.

GENUS STERCORARIUS BRISS.

14-36-(765). *Stercorarius pomarinus* (Temm.). POMARINE JAEGER.

Very rare; one taken on Beaver Island, Michigan, by Prof. Ludwig Kumlein. Reported (Butler's Birds of Ind.) from Lake Michigan; E. L. Mosley reports a specimen shot at Sandusky, O., Oct., 1889; the late W. H. Collins reported one specimen taken on Detroit River, and now in the collection of the Museum of Comparative Zoölogy, Cambridge Massachusetts.

FAMILY LARIDÆ. GULLS AND TERNS.

More common near the Great Lakes; feed on fish and meat; the larger gulls often accompany vessels.

SUBFAMILY LARINÆ. GULLS.

GENUS RISSA LEACH.

15-40-(782). *Rissa tridactyla* (Linn.). KITTIWAKE; KITTIWAKE GULL.

Rare accidental visitor" (Gibbs' Birds of Michigan); "arctic regions south in winter to New York" (Jordan). I think this a doubtful Michigan species. Dr. Gibbs informs me that it is reported from Mackinac Island.

GENUS LARUS LINN.

16-42-(768). *Larus glaucus* Brunn. GLAUCUS GULL; ICE GULL.

Rare; "Upper Peninsula and one taken at Klinger's Lake, St. Joseph county, 1892" (A. H. Boies); "Lake Michigan" (Butler's Birds of Ind.); Prof. Ludwig Kumlein reports taking several specimens at Milwaukee, Wis.; "south in winter to New York" (Jordan); embraced in the University list at Ann Arbor, and in the lists of Miles, Sager and Boies.

17-43-(769). *Larus leucopterus* Faber. ICELAND GULL; WHITE-WINGED GULL.

Rare; "Lake Michigan, winter" (Butler's Birds of Ind.); about all the great lakes; "rare on Lake Erie" (Jerome Trombley); "south to New York" (Jordan).

18-47-(771). *Larus marinus* Linn. GREAT BLACK-BACKED GULL.

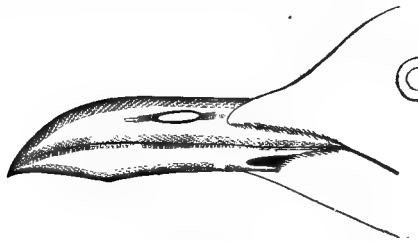
"Kent county, March 28, 1889, and Mackinac Island" (S. E. White); "winter visitant on Lake Michigan Dr. Velie, Ridgway's list of birds of Ill., 1874" (Gibbs' Birds of Michigan).

19-51a-(773). *Larus argentatus smithsonianus* Coues. AMERICAN HERRING GULL;
SMITHSONIAN GULL.

Very abundant; throughout the state; migrant and winter resident; breeds; "nests abundantly on Isle Royal, Michigan" (Frank S. Daggett in O. and O., Vol. XV, p. 99); "common in January on Saginaw Bay" (N. A. Eddy in O. and O., Vol. IX, p. 5); "nests very extensively on hummocks on the ground at Gull Island, east of Escanaba," (L. W. Watkins); "breeds at Mackinac Island, and is common on the Grand river at Grand Rapids" (S. E. White); "common on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland). This and Bonaparte's Gull are often seen as far inland as Lansing. They are common along all the great lakes. C. S. Osborn writes me that Gulls deposit barrels of eggs on the rocky island of Georgian Bay. These eggs are gathered by thousands and eaten by fishermen, or used in manufacturing eggine or egg albumen. The number is simply marvelous. See interesting article by Frank S. Daggett in O. and O., Vol XV, 1890, p. 99. It is stated that some of the very numerous nests at Isle Royale were on the unstable icebergs.

20-54-(778). *Larus delawarensis* Ord. RING-BILLED GULL.

Common throughout the state; migrant and winter resident; A. H. Boies says this is a summer resident; "Kent Co. and Mackinac Island" (S. E. White); "frequently seen in spring" (Jerome Trombley); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); "all United States south to Mexico" (Jordan).



Laughing Gull.

21-58-(786). *Larus atricilla* Linn. LAUGHING GULL; BLACK-HEADED GULL.

"Very abundant on the Great Lakes, probably breeds in the Northern Peninsula" (Gibbs' Birds of Michigan); very rare; "north if it occur at all" (Dr. A. K. Fisher); "fairly common" (Prof. Ludwig Kumlein); "common migrant on Lake Erie" (Jerome Trombley); "one killed in Washtenaw Co. in 1884" (L. W. Watkins). This species is given in Dr. Sager's list of 1839.

22-59-(787). *Larus franklinii* Sw. and Rich. FRANKLIN'S GULL.

"Not rare on Lake Michigan during winter and spring" (Gibbs' Birds of Michigan); "occasional migrant and rare winter visitor in Indiana" (Butler's Birds of Ind.); "chiefly west of the Mississippi" (Jordan).

23-60-(788). *Larus philadelphia* (Ord.). BONAPARTE'S GULL; BONAPARTE'S ROSE GULL.

Rather common in spring and fall; "throughout the state" (A. H. Boies); often seen inland; frequently killed at Lansing; "common at Bay City in Jan." (N. A. Eddy in O. and O., Vol. IX, p. 5); taken in Oakland Co., by J. B. Purdy; "about our inland lakes" (W. C. Brownell); "rather rare in Kalamazoo county" (Dr. M. Gibbs); found breeding on St. Clair Flats by W. H. Collins (Bull. Nutt. O. Club, Vol. V, p. 61); "occa-

sional in spring in Monroe Co." (Jerome Trombley); "Keweenaw Point" (Kneeland); "breed near Escanaba" (Prof. Ludwig Kumlein).

GENUS XEMA LEACH.

- 24-62-(790).** *Xema sabinii* (Sab.). SABINE'S GULL; FORKED-TAILED GULL.
"Lake Michigan" (Butler's Birds of Ind.); "south to New York" (Jordan).

SUBFAMILY STERNINÆ. TERNS; SEA SWALLOWS.

GENUS GELOCHELIDON BREHM.

- 25-63-(792).** *Gelochelidon nilotica* (Hasselq.). GULL-BILLED TERN; MARSH TERN.

Rather common; "a straggler and rather rare in Kalamazoo county" (Dr M. Gibbs); Great Lakes; often abundant on Lake Michigan; "often common on Lake Erie" (Jerome Trombley); "Ohio, Illinois and Michigan" (Butler's Birds of Indiana p. 108); "breeds on St. Clair Flats" (A. B. Covert); N. A. Eddy has found it common on Saginaw river in January.

GENUS STERNA LINN.

- 26-64-(793).** *Sterna tschegrava* Lepech. CASPIAN TERN.

Very rare; probably a straggler; one taken by the late W. H. Collins of Detroit is now in the National Museum; Great Lakes; winter; "taken repeatedly at Mackinac Island, identification certain" (S. E. White); said to breed on islands of Lake Michigan (see Davie's Nests and Eggs of North American Birds, p. 33). Prof. Ludwig Kumlein has taken several sets of eggs at Green Bay, Wisconsin.

- 27-65-(794).** *Sterna maxima* Bodd. ROYAL TERN; CAYENNE TERN.

Rare; spring and summer; Lake Michigan; "rare summer visitant, occasionally taken on Lake Michigan in late spring" (Gibbs' Birds of Michigan); common at Mackinac Island" (S. E. White); "Upper Peninsula" (A. H. Boies); see Butler's Birds of Indiana, p. 108.

- 28-69-(798).** *Sterna forsteri* Nutt. FOSTER'S TERN.

Not common; spring, summer and autumn; "Hillsdale county" (A. H. Boies); "breeds on St. Clair Flats" (A. B. Covert); "breeds freely in Upper Peninsula" (Prof. Ludwig Kumlein); "breeds on shore of Lake Superior" (H. Nehrling).

- 29-70-(797).** *Sterna hirundo* Linn. COMMON TERN; WILSON'S TERN; SEA SWALLOW.

Common; migrant; "Saginaw Bay" (N. A. Eddy); "common on Lake Erie" (Jerome Trombley); "breeds on St. Clair Flats" (A. B. Covert); "throughout the summer in northern Indiana, where it may breed" (Butler's Birds of Indiana); "Keweenaw Point" (Kneeland); "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); nests on ground; eggs four, very variable, often pinkish drab, spotted with brown or gray; nests rude. This bird is embraced in Dr. A. Sager's list of 1839.

- 30-71-(799).** *Sterna paradisæa* Brunn. ARCTIC TERN.

"Not a common migrant" (Gibbs' Birds of Michigan); "south to New York" (Jordan); "sometimes breeds at Lake Koshkonong, Wis." (Prof. Ludwig Kumlein).



Roseate Tern.

31-72-(800). *Sterna dougalli* Montag. ROSEATE TERN.

Rare; probably a straggler; Lake Michigan; "occasional visitor" (Gibbs' Birds of Michigan); one specimen recorded in catalogue of the Birds of Michigan in the museum of Kent Scientific Institute at Grand Rapids, by E. L. Moseley; "Prof. Smith shot two from a flock of five, in Hillsdale, in the spring of 1892" (F. M. Falkner); "common on Lake Erie and Raisin River" (Jerome Trombley); "probable summer resident" (Dr. J. B. Steere).

32-74-(801). *Sterna antillarum* (Less.). LEAST TERN.

Given in Gibbs' Birds of Michigan; "reported as a summer resident in northern Indiana" (Butler's Birds of Ind.); "certainly breeds at St. Clair Flats" (Dr. W. C. Brownell).

33-75-(804). *Sterna fuliginosa* Gmel. SOOTY TERN.

Dr. G. W. Topping, of DeWitt, is authority for one having been taken near DeWitt, in the spring of 1880. Coues says "along the Atlantic coast;" Ridgway says "north to Carolinas, casually to New England;" if taken in Michigan its occurrence was doubtless a rare accident.

GENUS HYDROCHELIDON BOIE.

34-77 (306). *Hydrochelidon nigra surinamensis* (Gmel.). BLACK TERN; SHORT-TAILED TERN.

Abundant; spring and summer; "Hillsdale Co." (A. H. Boies); "Mackinac Island" (S. E. White); taken at St. Clair Flats by W. H. Collins, (Bull. Nutt. O. Club, Vol. V, p. 61); "common on Lake Erie and Raisin River" (Jerome Trombley); "nests on floating debris at St. Clair Flats" (W. A. Davidson); "common at Saginaw" (Miles' Birds of Michigan); "Kent Co." (S. E. White); breeds; "abundant breeder in Wayne Co." (B. W. Swales); "probably raises two broods" (Amos W. Butler); nests about lakes in June on hummocks on the ground, often built up several inches; eggs three, greenish, "and spotted" (Gibbs).

ORDER STEGANOPODES. TOTIPALMATE SWIMMERS.

FAMILY PHALACROCORACIDÆ. CORMORANTS.

Heavy hooked-billed birds; food, fish; they do not plunge, but dive for their food.

GENUS PHALACROCORAX BRISS.

35-119-(750). *Phalacrocorax carbo* (Linn.). CORMORANT.

"An occasional visitor" (Gibbs' Birds of Michigan); of doubtful occurrence in Michigan.

36-120-(751). *Phalacrocorax dilophus* (Sw. and Rich.). DOUBLE-CRESTED CORMORANT.

"Common at times" (Dr. M. Gibbs); migrant or winter resident; "Southern Michigan, Hillsdale Co." (A. H. Boies); "our commonest species" (Jordan); "breeds in great numbers in Wis." (Davie's Nests and Eggs of North American Birds). Dr. Ezra S. Holmes, of Grand Rapids, has a fine male which he took in northern Indiana, just over the Michigan line, and Mr. Levi Broas took a fine female near Ionia, which is now in our museum.

FAMILY PELECANIDÆ. PELICANS.

Heavy birds with long, hooked beaks; large pouch beneath the lower jaw; food, fish; either plunge for or scoop up their food.

GENUS PELECANUS LINN.

37-125-(748). *Pelecanus erythrorhynchos* Gmel. AMERICAN WHITE PELICAN.

Very rare; "Hillsdale and Lenawee counties." (A. H. Boies); "one killed on Saginaw Bay, one in St. Joseph Co., and it has been seen in the Upper Peninsula" (Dr. M. Gibbs); one killed in Allegan county (O. and O., Vol. XVII, 1892, p. 143); one in museum from Berrien Co.; "one taken at Tecumseh, Lenawee Co., in 1882" (L. W. Watkins); "two killed in a flock of forty or fifty, at Cambria, Mich., and now mounted in a store in Hillsdale" (F. M. Falconer); "Keweenaw Point" (Kneeland).

ORDER ANSERES. LAMELLIROSTRAL SWIMMERS.

FAMILY ANATIDÆ. DUCKS, GEESE AND SWANS.

Birds with thick feathers, lamellate bills, palmate feet; food, mostly vegetable, some insects, etc.

SUBFAMILY MERGINÆ. Mergansers.

GENUS MERGANSE. BRISS.

38-129-(743). *Merganser americanus* (Cass.). AMERICAN MERGANSER; MERGANSER; GOOSANDER; FISH DUCK.

Common; "throughout the state" (A. H. Boies); migrant or winter resident; reported from St. Clair Flats; "have seen acres of water covered by them in spring" (Dr. W. C. Brownell); "Kent Co. and Mackinac Island" (S. E. While); "common at Iron

Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common migrant on Lake Erie" (Jerome Trombley); included in Dr. Sager's list of 1839; occasionally a summer resident, especially in the northern part of this state, where it may breed. This fine bird is very common at Saginaw Bay and about all the lakes in spring and fall; it is not fit for table use.



Red-breasted Merganser, natural size.

39-130-(744). Merganser serrator (Linn.). RED-BREASTED MERGANSER.

Rare; migrant; winter resident; often in large flocks; we have it from Saginaw Bay; taken at Plymouth by J. B. Purdy; A. H. Boies reports it from St. Joseph Co.; "common migrant on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); Mr. S. E. White took nine eggs from a nest on Round Island, near Mackinac Island, the nest was near the water's edge under a low cedar. Dr. A. K. Fisher thinks it doubtful if it breeds in Michigan. This Merganser is given in Sager's list of 1839.

GENUS LOPHODYTES REICH.

40-131-(745). Lophodytes cucullatus (Linn.). *HOODED MERGANSER; SAW-BILL; TOP-KNOT.

Very abundant; "throughout the State" (A. H. Boies); migrant; "Kent Co. and Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common migrant on Lake Erie" (Jerome Trombley); taken at Plymouth by J. B. Purdy; taken frequently at Pine Lake; in April and Sept.; may breed as it is occasionally taken in summer; "doubtless breeds, eggs usually ten to twelve, may range from six to eighteen" (Amos W. Butler); said to nest in hollow trees; "feeds on snails and crabs, excellent table duck" (J. H. Whitehead); "flesh almost as rank as that of the two preceding" (Ludwig Kumlein); this is one of our handsomest ducks. In California this duck is not noticed by hunters, as it has no value in the market.

GENUS ANAS LINN.

41-132-(707). Anas boschas Linn. *MALLARD; MALLARD DUCK; GREEN HEAD.

Very abundant; throughout the entire State; summer months, though usually a migrant; March, April, Sept. and Oct.; reported common in Kalamazoo and Wayne

counties; "abundant in Monroe Co." (Jerome Trombley); "abundant throughout the State" (A. H. Boies); "nests by thousands at St. Clair Flats" (Dr. W. C. Brownell); "very common in Kent Co. and Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests on the ground; Dr. Gibbs reports a nest in a hollow tree; nest elaborate; eggs six to twelve, color dirty white to olive green; excellent game bird. Our domestic ducks come largely from this species.

42-133-(708). *Anas obscura* Gmel. BLACK DUCK; DUSKY DUCK.

Common in fall and spring; occasional in fall and summer; "migrant and occasional winter resident in Northern Indiana" (Butler's Birds of Indiana); "throughout the entire State" (A. H. Boies); "Keweenaw Point" (Kneeland); reported from Bois Blanc Island; "Monroe Co." (Jerome Trombley); "undoubtedly breeds" (Dr. M. Gibbs); "Mr. W. A. Davidson took a nest at St. Clair Flats" (Dr. W. C. Brownell); Dr. J. B. Steere gives it as a questionable summer resident; Prof. Ludwig Kumlein writes me that this duck breeds in Northern Wisconsin and without doubt in our Northern Peninsula.

43-135-(711). *Anas strepera* Linn. *GADWALL.

"Common throughout the entire state" (A. H. Boies); April and October; migrant; "breeds in the Northern Peninsula" (Prof. Ludwig Kumlein); "Keweenaw Point" (Kneeland); often taken at Park and Pine Lakes near Lansing; Dr. J. B. Steere gives it as a summer resident with a question mark; included in Sager's list of 1839.

44-137-(713). *Anas americana* Gmel. BALDPATE; AMERICAN WIDGEON.

Common; migrant; April, May and October; "common in Monroe Co., but not known to breed" (Jerome Trombley); reported common at St. Clair Flats; "common in Kent Co." (S. E. White); Dr. J. B. Steere gives it as a doubtful summer resident; "rare summer resident in Northern Indiana, where it breeds" (Butler's Birds of Ind.); "Keweenaw Point" (Kneeland); we have fine specimens in our museum taken at Pine Lake. This species is included in Dr. A. Sager's list of 1839.

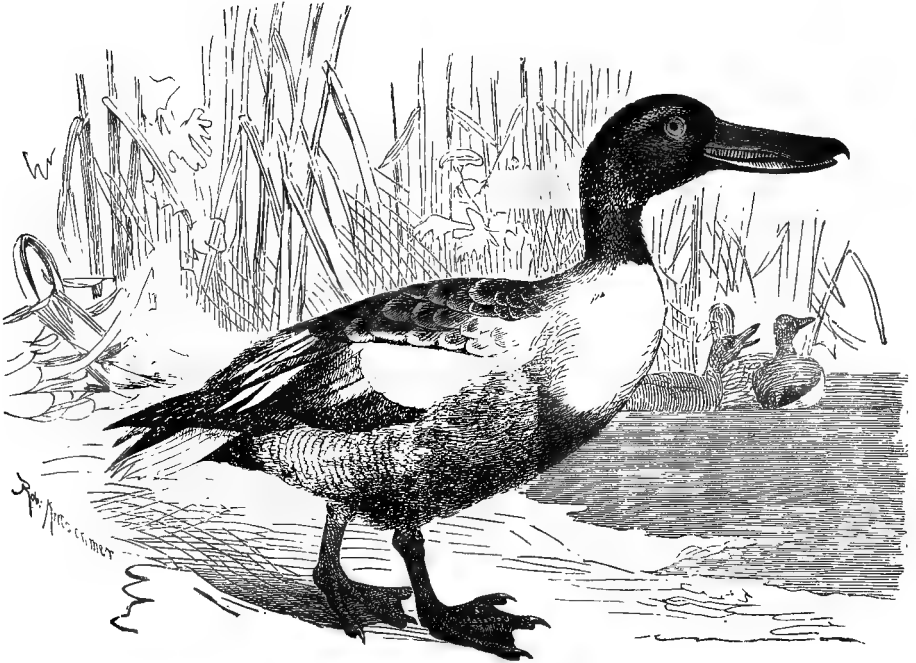
45-139-(715). *Anas carolinensis* Gmel. GREEN-WINGED TEAL.

Common; "throughout the state" (A. H. Boies); migrant; May and October; taken at Pine Lake near the college; this and the four succeeding species all taken at Plymouth by J. B. Purdy; "Keweenaw Point" (Kneeland); "migrant in Monroe Co." (Jerome Trombley); "breeds at St. Clair Flats" (Dr. W. C. Brownell); one of our best table ducks.

46-140-(716). *Anas discors* Linn. *BLUE-WINGED TEAL.

Very common; "throughout the state" (A. H. Boies); April and October; usually a migrant; "summer resident" (Dr. J. B. Steere); "common at Au Sable" (N. A. Eddy); two nests found and eggs taken by S. E. White in Allegan Co., May 28, 1891; "found breeding at the mouth of Kalamazoo river" (Dr. M. Gibbs); "occasionally breeds in Monroe Co." (Jerome Trombley); "surely breeds at St. Clair Flats" (Dr. W. C. Brownell); "breeds at Sault Ste. Marie" (C. S. Osborn); "Keweenaw Point" (Kneeland); nests on ground, in swamp grass; eggs twelve. Mr. J. B. Purdy writes me that he has frequently taken the young, some of which were yet unable to fly, at Plymouth.

GENUS SPATULA BOIE.

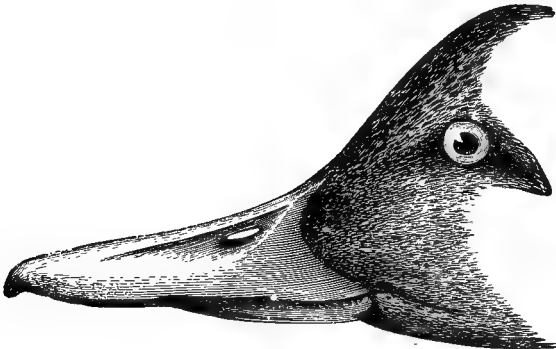


Shoveller, one-fourth natural size.

47-142-(718). *Spatula clypeata* (Linn.). SHOVELLER; SPOONBILL.

Very common; migrant; "breeds in the Northern Peninsula" (Prof. L. Kumlein); bill very broad; lamellæ of bill very marked; taken frequently at Pine Lake, near here, in April and May; Dr. Steere gives it as a questionable summer resident; "probably breeds in Northern Indiana" (Amos W. Butler); "St. Joseph and Monroe counties" (A. H. Boies); "common on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); in Sager's list of 1839.

GENUS DAFILA STEPH.



Pintail, female, natural size.

48-143-(710). *Asfla'acuta* (Linn.). PINTAIL; SPRIGTAIL.

Rather common; "throughout the State" (A. H. Boies); "Keweenaw Point" (Kneeland); migrant and possibly winter resident; Sept. and May; "Monroe Co." (Jerome Trombley); "never saw it in January" (Dr. M. Gibbs); "reported common at St. Clair Flats; "migrant" (Dr. J. B. Steere); "doubtful winter resident" (Amos W. Butler); embraced in Sager's list of 1839.

GENUS AIX BOIK.



Wood Duck, reduced.

49-144-(719). *Aix sponsa* (Linn.). *WOOD DUCK; SUMMER DUCK; TREE DUCK.

Very common; "throughout the entire State" (A. H. Boies); I have it authentically reported from Kent, Monroe, Washtenaw, St. Clair and Muskegon counties and Mackinac Island; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); summer resident; March, rarely Feb., to Nov.; "once common but now rare in Monroe Co." (Jerome Trombley); breeds abundantly; nests in the tops or hollows of trees, hence called tree duck; eggs, dirty yellowish white; one of our handsomest ducks; an excellent game bird; "the males sometimes feed in flocks during the breeding season" (S. E. White). This beautiful bird is common on the Red Cedar, which passes by our college campus, where I have often taken it from April to Oct. Unfortunately these birds, formerly so common, are being rapidly thinned by hunters.

GENUS AYTHYA BOIE.

50-146-(723). *Aythya americana* (Eyt.). REDHEAD; AMERICAN POCHARD.

Quite common; "throughout the entire state," (A. H. Boies); spring and fall; migrant; "common on Lake Erie" (Jerome Trombley); "abundant at Au Sable" (N. A. Eddy); "Keweenaw Point" (Kneeland); I also have reports from Kent and St. Clair counties; taken at Plymouth by J. B. Purdy; this is frequently taken at Pine Lake near here in October; found breeding at St. Clair Flats by W. H. Collins (Bull. Nutt. O. Club, Vol. V, p. 61). Davie, p. 58, mentions it as breeding in Michigan; included in Sager's list of 1839.

51-147-(724). *Aythya vallisneria* (Wils.). CANVAS-BACK.

Not very common; taken on Detroit river by J. R. Purdy; migrant; more abundant near the Great Lakes; "common on Lake Erie" (Jerome Trombley); "common at St. Clair Flats" (Dr. W. C. Brownell); "not found on inland lakes, but rarely taken at St. Clair Flats and Saginaw Bay" (A. H. Whitehead); "Keweenaw Point" (Kneeland); "common where wild celery abounds. rare at Sault Ste. Marie" (C. S. Osborn); perhaps our finest game duck.

52-148-(720). *Aythya marila nearectica* Stejn. AMERICAN SCAUP DUCK; GREATER SCAUP DUCK; GREATER BLUE-BILL; GREATER BLACKHEAD.

Common; "migrant at Ann Arbor" (Dr. J. B. Steere); fall and spring, often very common in fall; migrant; one nest reported by W. H. Collins from St. Clair Flats, (Bull. Nutt. O. Club, Vol. V, p. 61); "common at Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); taken at Plymouth by J. B. Purdy; we find it very common at Pine Lake in October; "common game duck" (Dr. W. C. Brownell).

53-149 (721). *Aythya affinis* (Eyt.). LESSER SCAUP DUCK; LESSER BLUE-BILL; LESSER BLACKHEAD.

Very abundant; migrant; taken plentifully at Pine Lake, five miles east of the college, in October and November; "common in Detroit markets" (Dr. W. C. Brownell); "exceedingly common at Au Sable, November, 1884" (N. A. Eddy); "common at Iron Mountain" (E. E. Brewster); "migrant at Ann Arbor" (Dr. J. B. Steere); "common at Lake Erie" (Jerome Trombley); one nest reported by W. H. Collins at St. Clair Flats, (Bull. Nutt. O. Club, Vol. V, p. 61); it very likely breeds here sparingly, north abundantly; "This is a good game bird and decoys very easily" (S. E. White).

54-150-(722). *Aythya collaris* (Donov.). RING-NECKED DUCK; BLACKHEAD.

Rather common; "throughout the state during migration," (A. H. Boies); taken at Plymouth by J. B. Purdy; "Iron Mountain, April 18, 1889" (E. E. Brewster); migrant; March and September; Davie, p. 70, says it breeds from New York to Wisconsin, and north; not rare at Pine Lake in October and November; given in Dr. A. Sager's list of 1839; "tolerably common in Northern Indiana" (Butler's Birds of Ind.).

GENUS GLAUCIONETTA STEJN.

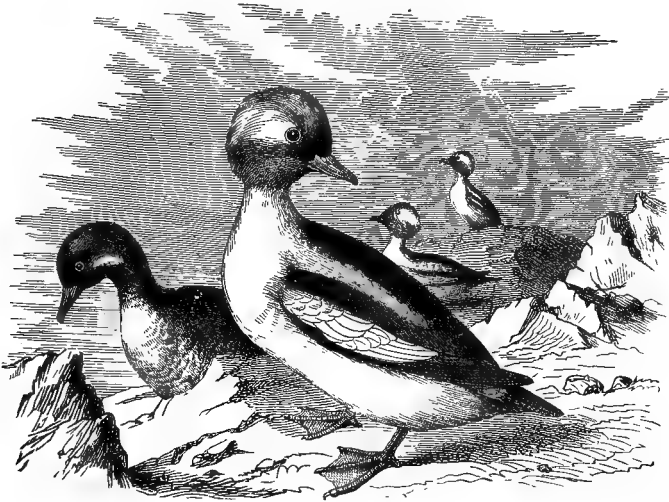
55-151-(725). *Glaucionetta clangula americana* (Bonap.). AMERICAN GOLDEN-EYE; GOLDEN-EYE; WHISTLER; GARROT.

"Common from the north, late in November, and often remains all winter on open spots of swift running rivers, dives at the flash of a gun, and will escape shot at thirty feet to my certain knowledge" (Dr. M. Gibbs); "throughout the state" (A. H. Boies); reported from Kent Co.; migrant; "Dr. Brayton gives this as a winter resident on Lake Mich." (Amos W. Butler); "winter resident on Lake Michigan and open inland lakes" (Prof. Ludwig Kumlein); "Keweenaw Point" (Kneeland); "common on the rapids of the St. Mary's River all winter" (C. S. Osborn); "this bird is taken at Pine Lake, is a fine game duck and is so quick to dive that it is difficult to shoot it on the water" (A. H. Whitehead). There are several of these ducks in the collection of Mr. Levi Broas, of Belding, Mich., taken by him in that locality. I think this a common species all through the Southern Peninsula.

56-152-(726). *Glaucionetta islandica* (Gmel.). BARROW'S GOLDEN-EYE.

Brayton in his "Birds of Indiana" gives this as a winter resident of Lake Michigan; "one taken at Hillsdale from a flock on the lake in 1892" (F. M. Falconer); "only taken on Lake Michigan as a rare straggler" (Ludwig Kumlein); "not uncommon winter resident on Lake Michigan" (H. Nehrling); embraced by Stockwell in his list of Michigan birds (F. and S., Vol. VIII. pp. 23, 380.

GENUS CHARITONETTA STEJN.



Buffle-head, much reduced.

57-153-(727). *Charitonetta albeola* (Linn.). *BUFFLE-HEAD; BUTTER-BALL; SPIRIT DUCK.

Very abundant; small flocks; "throughout the state" (A. H. Boies); spring and fall; winter resident; occasional in summer; "probably breeds at St. Clair Flats" (Dr. W. C. Brownell); reported from Kent and St. Clair counties; "common on Lake Erie" (Jerome Trombley); "Au Sable in October, 1884" (N. A. Eddy); "common at Au Sable" (N. A. Eddy); "not rare at Traverse City" (Dr. M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); taken by Dr. Atkins in April and July; we have taken several at Pine Lake in November. This duck is rapid of flight and quick to dive.

GENUS CLANGULA LEACH.

58-154-(728). *Clangula hyemalis* (Linn.). OLD SQUAW; OLD WIFE; LONG-TAILED DUCK.

Winter resident; more abundant near Great Lakes; one specimen taken near here at Pine Lake; reported from Kent Co.; occasionally common in Kalamazoo Co.—"A flock noted Feb. 1884" (Dr. M. Gibbs); "two specimens taken in Grand Traverse Co." (Dr. M. L. Leach); "St. Joseph Co." (A. H. Boies); common migrant on Lake Erie" (Jerome Trombley); "abundant on Lake Michigan" (Butler's Birds of Indiana).

GENUS HISTRIONICUS LESS.

59-155-(730). *Histrionicus histrionicus* (Linn.). HARLEQUIN DUCK.

Very rare; admitted in Gibbs' Birds of Michigan. A. H. Boies thinks this should be included. Prof. Ludwig Kumlein writes me that he has taken two specimens in Jefferson Co., Wisconsin.

GENUS SOMATERIA LEACH.

60-160-(734). *Somateria dresseri* Sharpe. AMERICAN EIDER.

"Occasionally seen on Lake Superior" (Gibbs' Birds of Michigan); the late W. H. Collins reported taking a young male in Detroit on Detroit river, Dec. 1882. If this bird occur in Michigan it must be as an accidental straggler.

61-162-(736). *Somateria spectabilis* (Linn.). KING EIDER.

"Straggler taken at Milwaukee and Grand Haven, Michigan" (Prof. Ludwig Kumlein). Dr. A. K. Fisher thinks this very doubtful.

GENUS OIDEZIA FLEM.

62-163-(737). *Oidemia americana* Sw. and Rich. AMERICAN SCOTER; AMERICAN BLACK SCOTER.

"Rare accidental visitor" (Gibbs' Birds of Michigan); taken at Au Sable, Oct., 1884 (N. A. Eddy in O. and O., Vol. IX, p. 41); "not uncommon in winter on Lake Michigan" (H. Nehrling and L. Kumlein).

63-165-(738). *Oidemia deglandi* Bonap. WHITE-WINGED SCOTER; VELVET SCOTER.

Rather rare; migrant; two in our museum taken at Pine Lake near here in 1885; "Lake Michigan" (Butler's Birds of Ind.); "this bird is becoming more numerous, now frequently taken during migration at Park and Pine Lakes near Lansing" (C. J. Davis); "occurs regularly on Lake Michigan" (Prof. Ludwig Kumlein); "cannot be called common in Upper Peninsula" (C. S. Osborn).

64-166-(739). *Oidemia perspicillata* (Linn.) SURF DUCK; SURF SCOTER; SEA COOT.

Very rare; winter visitor; "Au Sable and Saginaw Bay" (N. A. Eddy in O. and O., Vol. IX, 1884, pp. 4 and 41); "regular migrant on inland lakes of Wisconsin" (Prof. Ludwig Kumlein); "not uncommon on Lake Michigan" (H. Nehrling); "taken near Iron Mountain Oct. 20, 1890" (E. E. Brewster).

GENUS ERISMATURA BONAP.

65-167-(741). *Erismatura rubida* (Wils.). RUDDY DUCK; BLACK JACK.

Exceedingly abundant; "throughout the State" (A. H. Boies); migrant; April, Oct. and Nov.; very common at Pine Lake; taken in Oakland county by J. B. Purdy; reported from Kent Co.; "exceedingly abundant some falls in Kalamazoo Co." (Dr. M. Gibbs); "common migrant on Lake Erie" (Jerome Trombley); Mr. Jerome Trombley reports large numbers on Raisin River in spring of 1888; "at Mackinac Island" (S. E. White); given by Dr. J. B. Steere as a summer resident; flocks; very fearless and stupid; "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); the late W. H. Collins reported taking eggs; "not very good eating" (A. H. Whitehead).

GENUS CHEN BOIE.

66-169-(696). *Chen hyperborea* (Pall.). LESSER SNOW GOOSE.

Rare; migrant; reported from Michigan in the catalogue of the museum of the

Kent Scientific Institute, by E. L. Moseley; included in Butler's Birds of Indiana; "accidental if in Michigan" (Prof. Ludwig Kumlein); "northern counties of Indiana" (Butler's Birds of Indiana). It is possible that the next is often mistaken for this one.

67-169a (695). *Chen hyperborea nivalis* (Forst.). GREATER SNOW GOOSE.

Common; Mar. and Oct. and Nov.; throughout the State; migrant; Mr. A. H. Boies has seen large flocks flying in Hillsdale and Lenawee counties during winter; Dr. M. Gibbs reports taking three of these from a flock of ten or more Oct. 24, 1884; "Keweenaw Point" (Kneeland); doubtfully given as a Michigan migrant by Dr. J. B. Steere; known to alight not infrequently near Lansing; excellent table bird.

68 169.1-(694). *Chen caerulescens* (Linn.). BLUE GOOSE.

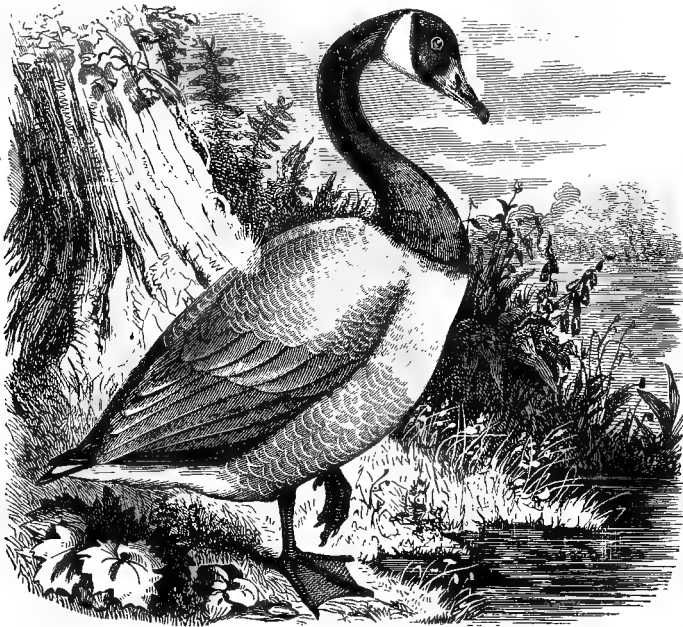
One specimen reported in Kent Scientific Institute at Grand Rapids by E. L. Moseley; two captured from a flock on St. Clair Flats by the late W. H. Collins; "regular migrant throughout Wisconsin" (Prof. Ludwig Kumlein); "Indiana" (Butler's Birds of Indiana).

GENUS ANSER BRISS.

69-171a-(693). *Anser albifrons gambeli* (Hartl.). *AMERICAN WHITE-FRONTED GOOSE.

"Transient, rare" (Dr. M. Gibbs); "migrant" (Dr. J. B. Steere); "Keweenaw Point" (Kneeland); "Indiana, rare migrant" (Butler's Birds of Indiana). This is unquestionably very rare in Michigan.

GENUS BRANCA SCOP.



Canada Goose, reduced.

70-172-(702). *Branta canadensis* (Linn.). *CANADA GOOSE; COMMON WILD GOOSE.

Common; Feb. to Apr., and Sept. even to Dec.; throughout the entire State; often seen flying over in March and November, and occasionally much earlier and later in large flocks, which are usually arranged in quite definite V-shaped figures; more commonly seen early or late in the day, and heard at all times of night; frequently alights; "often in wheat fields" (Jerome Trombley); "Keweenaw Point" (Kneeland); nests on the ground; eggs, five to six, yellowish green, "not distinguishable from those of our common geese" (Dr. C. W. Brownell). These birds are very shy and so are rarely taken. "Mr. Briggs of Wayne Co. has a fine pair. They attempt to migrate each season, which he prevents. They breed well in confinement. They cross readily with common geese, but the hybrids are infertile" (Dr. W. C. Brownell); "will sometimes swim up to ducking stools, and fly low in foggy weather" (L. S. Foster).

71-172a-(704). *Branta canadensis hutchinsii* (Sw. and Rich.). HUTCHINS' GOOSE.

Rare migrant; reported in catalogue of birds of Michigan in the Kent Scientific Institute by E. L. Moseley; taken by the late W. H. Collins on St. Clair Flats. Amos W. Butler gives it as a rare migrant in Indiana; and, upon Dr. Brayton's authority, says it formerly bred in that state (Birds of Indiana, p. 25).

72-172b-(702a). *Branta canadensis occidentalis* (Baird). WHITE-CHEEKED GOOSE.

Reported by the late W. H. Collins, who was a very accurate observer. Dr. A. K. Fisher thinks this doubtful.

72-172c-(703). *Branta canadensis minima* Ridgw. CACKLING GOOSE.

Reported by the late W. H. Collins.

74-173-(700). *Branta bernicla* (Linn.). BRANT.

Rare or accidental; "common wild goose in the Upper Peninsula" (A. H. Boies); reported from Michigan by Robert B. Lawrence (Forest and Stream, Vol. XXXII, p. 316); migrant; this species while more common near the ocean, is said to occur not rarely in Michigan and the surrounding states; "I have often seen them" (Dr. W. C. Brownell); "Indiana" (Butler's Birds of Indiana); good game bird.

GENUS *OLOR* WAGLER.**75-180-(689). *Olor columbianus* (Ord). *WHISTLING SWAN; AMERICAN SWAN.**

Rare; migrant; occasional in summer; one in museum taken at Maple Rapids; one taken at Plymouth by J. B. Purdy; one killed at Mason, this county, Nov. 28, 1878; "have known several to be shot about our inland lakes" (Dr. W. C. Brownell); one taken by Mr. Levi Broas near Ionia and now in his fine collection; two taken by E. A. Lockwood in the month of December at South Haven (Am. Field, Vol. XXVII); "they occasionally occur in flocks in Jackson and Washtenaw counties, where they have been taken repeatedly. They are very shy and remain near large inland lakes" (L. W. Watkins); "not infrequently seen in Lenawee and Hillsdale counties" (A. H. Boies); "occasionally shot by hunters on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); embraced in Dr. A. Sager's list of 1839.

76-181-688. *Olor buccinator* (Rich.). TRUMPETER SWAN.

Rare; migrant; "Hillsdale Co." (A. H. Boies); one taken in Kent Co. by E. S. Holmes and now in his collection at Grand Rapids; included in the lists of Michigan birds by Covert, Fox, Stockwell and Steere; counties of Northern Indiana (Butler's Birds of Indiana).

ORDER HERODIONES. HERONS; STORKS; IBISES; ETC.

SUBORDER IBIDES. SPOON-BILLS AND IBISES.

FAMILY IBIDIDÆ. IBISES.

Long bills; rather short legged waders; food, fish and other aquatic animals.

GENUS PLEGADIS KAUP.

77-186-(649). *Plegadis autumnalis* (Hasselq.). GLOSSY IBIS.

Very rare; occasional straggler; one Michigan specimen reported in the catalogue of the Kent Scientific Institute by E. L. Moseley; "killed Oct. 6, 1884, on Saginaw Bay" (N. A. Eddy O. and O., Vol. X, p. 9).

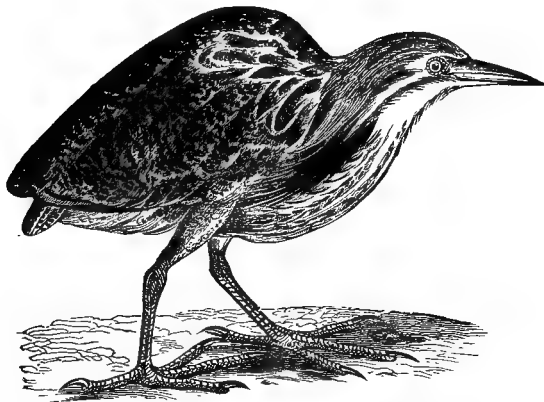
SUBORDER HERODII. HERONS; EGRETS; BITTERNS; ETC.

FAMILY ARDEIDÆ. HERONS; BITTERNS; ETC.

Feed on fish, frogs and toads, etc.; about marshes; not usually game birds.

SUBFAMILY BOTAURINÆ. BITTERNS.

GENUS BOTAURUS HEERMANN.



Bittern, reduced.

78-190-(666). *Botaurus lentiginosus* (Montag.). *AMERICAN BITTERN; STAKE DRIVER; SHYTEPOKE; INDIAN HEN; "THUNDER PUMPER; "BARREL MAKER;" PLUM PUDDEN.

Common; throughout the state; April to August; "common in Monroe Co." (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Sault Ste. Marie" (A. H. Boies); "Keweenaw Point" (Kneeland); reported from Kent Co. and Ann Arbor; breeds; nests, but not in colonies, on the ground, usually in marshes and often surrounded by water; "breeds in great numbers about marshes in Shiawassee county" (Dr. W. C. Brownell), occasionally in meadows; nest elaborate; eggs three to seven, drab or mud color; the males make as a love note a sound like "plum pudden," also another like a ringing or pumping sound, as if pounding a barrel (see article by Bradford Torrey in "The Auk" for January 1889); a very common bird in nearly all parts of Michigan; destroys field mice. For interesting articles on this bird by Dr.

M. Gibbs, describing notes and contortions in uttering them, see O. and O., Vol. XIV, 1889, p. 21, and Oölogist, Vol. X, 1892, p. 73.

79-191-(667). *Botaurus exilis* (Gmel.). LEAST BITTERN.

Common throughout Southern Michigan; summer resident; "abundant at Ann Arbor and at Grand Rapids" (R. H. Wolcott); "common in Oakland county, where it breeds" (Dr. W. C. Brownell); "common in Monroe Co." (Jerome Trombley); one in collection of C. E. Holmes at Grand Rapids taken in Muskegon Co.; "all Southern Michigan" (A. H. Boies); breeds; nests in June, on the ground, in marshes, on a simple platform of reeds and sedges, often half way up on dead flags, usually over the water, "occasionally in a bush" (Prof. J. W. Simmons); eggs three to six, white with bluish tinge; "nests in Oakland county" (W. C. Brownell, in O. and O., Vol. XVI, p. 32); bird stupid and so, easily caught. This species occurs in Sager's list of 1839.

SUBFAMILY ARDEINÆ. HERONS AND EGRETS.

GENUS ARDEA LINN.



Great Blue Heron.

80 194-(655). *Ardea herodias* Linn. * GREAT BLUE HERON.

Very common; throughout the state; "Grand Traverse county, where there is a heronry" (Dr. M. L. Leach); "common at Iron Mountain" (E. E. Brewster); breeds in colonies; nests in May, in tall trees, near marshes; "sticks in nests sometimes one inch in diameter and five feet long" (Prof. J. W. Simmons); Dr. W. C. Brownell knows of three heronries near Morrice, Shiawassee county. He says the stench is terrible at nesting time. There are often six nests in a tree. The trees, he says, are sure to die; eggs four to six, blue; S. E. White took three nests with five, one with six and one with seven eggs from one tree, May 2, 1881. There was a large heronry just west of Lansing for years. The nests, which were numerous, were in large sycamores which stood in a large marsh. I secured several birds and eggs from this place. Dr. Steere reports heronries in black ash swamps about Ann Arbor. "Heronries are quite common in Southwestern Michigan. The birds fish three times daily. I have taken thirty-five minnows, from two to four inches long, from the stomach of one of these birds" (J. W. Simmons). C. B. Cook took a fish that was twelve inches long and weighed over one pound from the stomach of a Heron. These birds are often very fearless. I have often walked to within a rod or two of a bird before it would fly.

81-196-(658). *Ardea egretta* Gmel. AMERICAN EGRET; GREAT WHITE HERON; GREAT WHITE EGRET.

Very rare; wanderer from the south; A. H. Boies reports it from Lenawee, Hillsdale, St. Joseph and Jackson counties; Jerome Trombley reports it from Monroe Co., where he took one in 1889; "occasionally abundant in July and August, undoubtedly breeds in the state, but where?" (Dr. M. Gibbs); "quite common in late summer in Wayne county, where they are taken half grown, but who knows where they breed?" (Dr. W. C. Brownell); we had one in our museum taken from Jackson Co.; one taken by J. B. Purdy at Plymouth and now in his cabinet; two taken at Greenville, Montcalm Co., in 1890 by Prof. Jas. Satterlee; Dr. Atkins does not mention this bird; "breeds in Northern Wisconsin and without doubt in the Northern Peninsula of Michigan (Prof. Ludwig Kumein); doubtless breeds in Northern Indiana (Butler's Birds of Indiana); this species is given in Sager's list of 1839. There is a fine specimen in the collection of Mr. Levi Broas, taken in Ionia county.

82-197-(659). *Ardea candidissima* Gmel. SNOWY HERON; LITTLE WHITE EGRET.

Very rare; wanderer from the south; "a rare accidental visitor during July and August, does not breed" (Dr. M. Gibbs).

83-199-(660). *Ardea tricolor ruficollis* Gosse. LOUISIANA HERON; LOUISIANA EGRET; LADY OF THE WATERS.

Exceedingly rare; summer wanderer from the South; one specimen reported by E. L. Moseley in the catalogue of the Kent Scientific Institute at Grand Rapids; one reported by A. H. Boies from Lenawee Co.; one reported from northern Indiana (Butler's Birds of Indiana); Dr. M. Gibbs thinks this bird should be omitted from the list.

84-201-(663). *Ardea virescens* Linn. GREEN HERON; FLY UP THE CREEK.

Common; "throughout the State" (A. H. Boies); summer resident; two killed on college farm in May; "common at Ann Arbor" (Dr. J. B. Steere); "common in Monroe Co." (Jerome Trombley); "Keweenaw Point" (Kneeland); found nesting at Plymouth by J. B. Purdy; often quite tame; breeds; nests often in small colonies as does the Great

Blue Heron, in May; eggs three to six, pale blue. There are several of these, taken in Ionia Co., in the collection of Mr. Levi Broas.

GENUS NYCTICORAX STEPH.

85-202-(664). *Nycticorax nycticorax naevius* (Bodd.). AMERICAN NIGHT HERON; BLACK-CROWNED NIGHT HERON; SQUAWK; NIGHT RAVEN.

Rare; taken on Chandler's marsh north of the college; "southern Michigan" (A. H. Boies); "rare in Monroe Co." (Jerome Trombley); one taken in Lenawee Co. by Dr. W. C. Brownell; one in collection of Levi Broas, taken in Ionia Co.; breeds; nests in June, in colonies, in trees; C. S. Osborn of Sault Ste. Marie writes me that there is a great colony on Espanore Island at the mouth of St. Mary's River. The Indians and fishermen eat the eggs. He has seen over one hundred nests there in the Birch and Balsam trees, the same nests are used over and over year after year. He adds these may possibly be the Great Blue Heron; eggs four, occasionally five or six; "three or four" (L. S. Foster), bluish; young birds in autumn said to be of good flavor and prized for the table.

ORDER PALUDICOLÆ. CRANES; RAILS, ETC.

SUBORDER GRUES. CRANES.

FAMILY GRUIDÆ. CRANES.

Fine robust birds; feed on rootlets, grasses, grains, reptiles, toads, frogs, etc.

GENUS GRUS PALL.

86-204-(668). *Grus americana* (Linn.). WHOOPING CRANE; WHITE CRANE.

Very rare; probably accidental if it occur at all; Covert says "very irregular visitor at Ann Arbor;" "occasionally seen both singly and in flocks of ten or twelve about marshes at Manchester, Washtenaw county, where it has been killed repeatedly" (L. W. Watkins); were these not mistaken identifications? "they probably were" (Dr. A. K. Fisher); northern Indiana (Butler's Birds of Indiana).

87-205-(669). *Grus canadensis* (Linn.). LITTLE BROWN CRANE.

"Transient visitor of the Upper Peninsula" (H. Nehrling); "doubtful" (Dr. A. K. Fisher).

88-206-(670). *Grus mexicana* (Müll.). * SANDHILL CRANE.

Common; southern Michigan, Mar. to Oct.; more common near marshes; Judge J. H. Steere of Sault Ste. Marie reports this species from the Upper Peninsula; "Keweenaw point" (Kneeland); breeds; Dr. Atkins took a nest at Locke, June 18, 1879; "not rare and breeds in marshes in Monroe county" (Jerome Trombley); "never seen now in Kalamazoo county" (Dr. M. Gibbs); nests in June on old sedges, on the ground; "nests at Sauger Lake, Shiawassee county" (Dr. W. C. Brownell); eggs two, drab, specked and spotted with brown. We have taken several of these birds here, old and young, which are now preserved in the museum. Mr. L. W. Watkins informs me that they appear often in Jackson county near small lakes, in large flocks of 100 or more, in Oct. and Nov., where they feed extensively on corn, shelling and eating it after it is cut. A young one was reared by Mr. Watkins until two years of age. They are prized by some

people for table use. Dr. Brownell writes me that he has known them to be so tame that he could walk to within twenty feet of them; the male often executes a queer dance, and their note is like the rapid stroke of a coarse cow bell.

SUBORDER RALLI. RAILS; GALLINULES; COOTS, ETC.

FAMILY RALLIDÆ. RAILS; GALLINULES, ETC.

Feed on reptiles and aquatic animals.

SUBFAMILY RALLINÆ. RAILS.

GENUS RALLUS LINN.

89-208-(676). *Rallus elegans* Aud. KING RAIL; RED-BREASTED RAIL; FRESH WATER MARSH HEN.

Rather common; we have it from this place and Saginaw Bay; "Hillsdale Co." (A. H. Boies); "abundant in marshes of Monroe Co. near Lake Erie" (Jerome Trombley); "breeds at Plymouth, Wayne Co." (J. B. Purdy); "a rare transient in Kalamazoo Co., only twice captured to my knowledge" (Dr. M. Gibbs); breeds; nests on the ground; "nests abundantly in Wayne and St. Clair counties" (B. H. Swales); eggs six to twelve, buff, spotted with varying hues of brown; a young bird in collection of E. S. Holmes, of Grand Rapids, was taken by him near the mouth of the Kalamazoo River, in Allegan Co. Dr. W. C. Brownell writes me that he took ten eggs from a nest. The old bird was very fearless. He has seen the young, mere puffs of black down, leave the nest within a half hour of hatching.

90-212-(677). *Rallus virginianus* Linn. * VIRGINIA RAIL.

Very common; Southern Michigan; May to September; "abundant in Southwestern Michigan" (Prof. J. W. Simmons); "abundant about marshes in Monroe Co., near Lake Erie" (Jerome Trombley); "breeds near St. Clair" (B. H. Swales); nests on stems of flags, etc., on the ground; eggs six to twelve, usually seven or eight, creamy white, spotted with small spots of reddish brown. I have found these common here and very common at Saginaw Bay. Mr. L. W. Watkins tells me that they nest very abundantly at Traverse City. This is hunted as a game bird, but is rather inferior for table use; "these birds never commence to sit till a full complement of eggs is laid" (J. B. Purdy).

GENUS PORZANA VIEILL.



Carolina Rail, reduced.

91-214-(679). *Porzana carolina* (Linn.). *SORA; CAROLINA RAIL; CRAKE; ORTOLAN.

Very common; Southern Michigan; May to Oct.; "abundant in Southern Michigan" (J. W. Simmons); "Looking Glass River near DeWitt" (Dr. G. W. Topping);

breeds; "not uncommon on Portage Lake, Keweenaw Point" (Kneeland); "incubation and laying conterminous, so that hatching continues for days" (B. W. Swales); "common at Mackinac Island" (S. E. White); "nests abundantly at Plymouth, Wayne Co." (Jas. B. Purdy); "breeds abundantly in Saginaw marshes" (N. A. Eddy); Mr. Jerome Trombley finds it breeding in Monroe county; I have taken the eggs abundantly at Saginaw; nests in June, on ground, in bog or meadow; eggs five to fourteen, very rarely to twenty, drab, with yellowish tint, darker and with larger spots than those of the Virginia Rail; often in flocks; excellent game bird, though not good shooting as they are slow to take wing; "I have taken twenty eggs from one nest. The bird commences to sit as soon as the first egg is laid, so the eggs are at all stages of incubation" (J. B. Purdy).

92-215-(680). *Porzana noveboracensis* (Gmel.). YELLOW RAIL; YELLOW CRAKE.

Rare; "probably breeds" (Gibbs' Birds of Michigan); reported in Michigan (Forest and Stream, Vol. XXV, p. 347); see Butler's Birds of Indiana; "summer resident" (Dr. J. B. Steere).

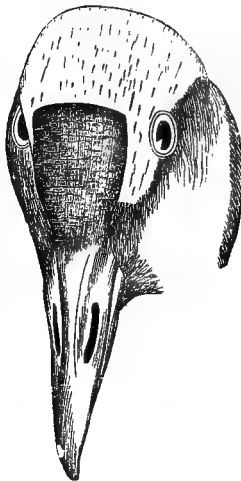
SUBFAMILY GALLINULINÆ. GALLINULES.

GENUS GALLINULA BRISS.

93-219-(684). *Gallinula galeata* (Licht.). *FLORIDA GALLINULE.

Common; "Hillsdale Co." (A. H. Boies); Mr. Boies thinks they migrate at night, but not in flocks; "common at Saginaw" (Miles' Birds of Michigan, p. 231); "breeds at Plymouth" (J. B. Purdy); "have seen thousands at St. Clair Flats" (Dr. W. C. Brownell); taken at the college; breeds; we have eggs in the museum taken near Grand Ledge; "many nests found in Kalamazoo Co." (Dr. M. Gibbs); nests and eggs as in the following species; a fine table bird.

GENUS FULICA LINN.



Frontal Shield of Coot.

94-221-(686). *Fulica americana* Gmel. *AMERICAN COOT; COOT; MUD HEN.

Very common; throughout the entire State; "do not summer in Kalamazoo

county, but are abundant in migrations" (Dr. M. Gibbs); "common in Upper Peninsula" (E. E. Brewster); "Keweenaw Point" (Kneeland); reported from Mackinac Island; summer months; breeds; nests on the ground, frequently on floating nests; eggs six to twelve, occasionally fifteen, elongate, yellowish drab, spotted with fine dark spots. I have found the nests and eggs very common at Saginaw Bay.

ORDER LIMICOLÆ. SHORE BIRDS.

FAMILY PHALAROPODIDÆ. PHALAROPES.

Typical waders; food insects, molluscs, crustaceans, etc.

GENUS CRYMOPHILUS VIEILL.

95-222-(604). *Crymophilus fulicarius* (Linn.). RED PHALAROPE; GRAY PHALAROPE.

Northern Indiana, rare, probable migrant, probably in Southern Michigan (Butler's Birds of Indiana); embraced in Stockwell's Birds of Michigan; Dr. Steere classifies it among Michigan migrants; Prof. Ludwig Kumlein writes me that this bird breeds in the Northern Peninsula, which, writes Dr. A. K. Fisher, seems very improbable.

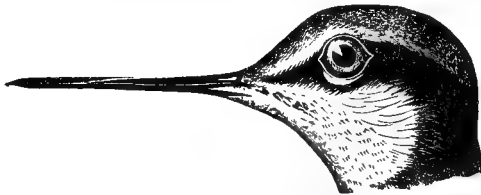
GENUS PHALAROPUS BRISS.



Northern Phalarope, nat. size.

96-223-(603). *Phalaropus lobatus* (Linn.). NORTHERN PHALAROPE; RED-NECKED PHALAROPE.

Exceedingly rare; "rare visitor" (Dr. Morris Gibbs); Dr. J. B. Steere classifies this doubtfully as a Michigan migrant; record by R. B. Lawrence of occurrence of this bird at Monroe, Michigan, (Forest and Stream Vol. XXV, p. 372); Prof. Ludwig Kumlein writes me that it breeds in northern Wisconsin and presumably in our Northern Peninsula. I think he must refer to Wilson's Phalarope.



Wilson's Phalarope, natural size.

97-224-(602). *Phalaropus tricolor* (Vieill.) WILSON'S PHALAROPE.

"Common, irregular, transient, only occasionally seen, taken in May and Sept. in Kalamazoo Co." (Dr. M. Gibbs); Dr. J. B. Steere puts it doubtfully among the summer residents; taken by E. E. Brewster at Iron Mountain, May 2, 1890; "Keweenaw Point" (Kneeland); northern counties of Indiana, where it breeds (Butler's Birds of Indiana).

FAMILY RECURVIROSTRIDÆ. AVOCETS AND STILTS.

Very long bills and legs; food small molluscs, crustaceans and insects.

GENUS RECURVIROSTRA LINN.

98-225-(600). *Recurvirostra americana* Gmel. AMERICAN AVOCET.

"One specimen from Michigan in the Kent Scientific Institute" (E. L. Moseley); one taken by W. H. Collins near Detroit; embraced in Butler's Birds of Indiana.

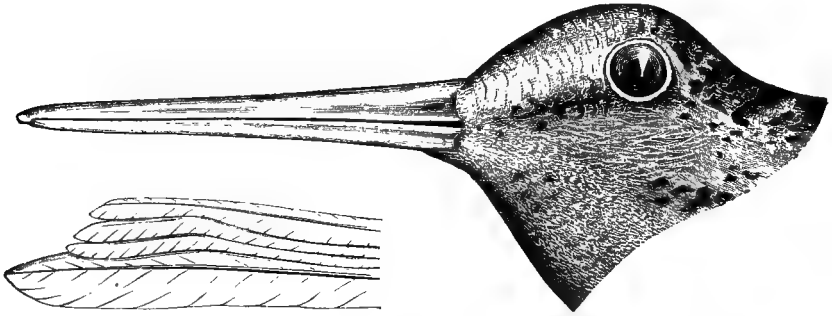
GENUS HIMANTOPUS BRISS.

99-226-(601). *Himantopus Mexicanus* (Mull.). BLACK-NECKED STILT.

"Rare transient" (Gibbs' Birds of Michigan); of doubtful occurrence in Michigan. Dr. Steere gives it doubtfully as breeding in Michigan.

FAMILY SCOLOPACIDÆ. SNIPES, SANDPIPERS ETC.

Feed on small aquatic animals, insects etc.; eggs densely spotted, usually pointed at one end; game birds.



Woodcock, head and outer primaries, natural size.

GENUS PHILOHELA GRAY.

100-228-(605). *Philohela minor* (Gmel.). *AMERICAN WOODCOCK.

Common from March, rarely February, to October or November; "occasionally every month of the year" (Gibbs); throughout the state; "formerly very common in Wayne county, but goes as the marshes are drained" (Dr. W. C. Brownell); R. H. Wolcott saw one January 1, 1888, at Grand Rapids, when the snow was one foot deep; reported from Presque Isle Co.; "Grand Traverse Co." (Dr. M. L. Leach); "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in April, on the ground in thick brush; eggs four, gray, speckled and spotted with dark brown; esteemed as a game bird; taken at the College, October 30, 1892.

GENUS GALLINAGO LEACH.



Wilson's Snipe, reduced.

101-230-(608). Gallinago delicata (Ord). *WILSON'S SNIPE; JACK SNIPE; AMERICAN SNIPE.

Common in April and October; throughout the state; not very rare in summer; reported in Presque Isle and Muskegon Counties; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); said to breed; "found breeding once" (Dr. M. Gibbs); nests on the ground, in May; eggs four, colors as above; prized as a game bird; "I have seen it, but only as a migrant" (Dr. W. C. Brownell); somewhat gregarious; this bird, according to Butler, is known as English Snipe, Jack Snipe, Common Snipe and Gutter Snipe.

GENUS MACRORHAMPHUS LEACH.

102-232-(610). Macrorhamphus scolopaceus (Sav). RED-BREASTED SNIPE; GRAY SNIPE; GRAYBACK; GRAY-BACKED SNIPE; LONG-BILLED DOWITCHER; DOWITCHER.

Migrant; "a small flock was seen in Kalamazoo county May 21, 1888" (Dr. M. Gibbs); "occasionally seen in Hillsdale and Lenawee counties" (A. H. Boies); doubtfully given as a Michigan migrant by Dr. J. B. Steere; "Keweenaw Point" (Kneeland); Prof. Ludwig Kumlein writes me that it breeds in the Northern Peninsula; Davie, p. 111, states that this species breeds on the border of Lake Superior and north: small flocks about marshes; excellent table bird.

GENUS MICROPALAMA BAIRD.

103-233-(611). Micropalama himantopus (Bonap.). STILT SANDPIPER.

"Not rare some seasons near large bodies of water and occasionally taken in the interior" (Dr. M. Gibbs); Dr. J. B. Steere gives it as a doubtful Michigan migrant; "Keweenaw Point" (Kneeland); Prof. Ludwig Kumlein writes me that it breeds in the Northern Peninsula, which seems hardly probable. "Was taken near Lafayette, Ind., in spring of 1892; first Indiana record" (A. W. Butler).

GENUS TRINGA LINN.

104-234-(626). Tringa canutus Linn. KNOT; RED-BREASTED SANDPIPER; ROBIN SNIPE.

"Rare migrant" (Dr. M. Gibbs); "migrant" (Dr. J. B. Steere); included in list of

Rev. Chas. Fox; May and Sept.; small flocks; if this bird occur in Michigan it is very rarely.

105-239-(616). *Tringa maculata* Vieill. PECTORAL SANDPIPER; "JACK SNIPE"; GRASS SNIPE.

Very abundant; migrant; "throughout the state" (A. H. Boies); "very common on Lake Erie in Monroe Co." (Jerome Trombley); "taken at Plymouth" (J. B. Purdy); "not rare but decidedly irregular in spring and autumn" (Dr. M. Gibbs); we have taken several here at Lansing; May and Sept.; flocks about marshes; migrant; good game bird; feeds extensively on locusts and other insects.

106-240-(617). *Tringa fuscicollis* Vieill. WHITE-RUMPED SANDPIPER; BONAPARTE'S SANDPIPER.

"Not common north" (Gibbs' Birds of Michigan); "breeds far north of us" (Dr. A. K. Fisher); Jerome Trombley reports it not rare about Lake Erie; "migrant at Plymouth" (J. B. Purdy); "migrant" (Dr. J. B. Steere); "a rather rare, irregular migrant" (Dr. M. Gibbs); "breeds far north" (H. Nehrling).

107-241-(615). *Tringa bairdii* (Coues). BAIRD'S SANDPIPER.

This species is embraced in Covert's Birds of Michigan, Cabot's Birds of Lake Superior, and is given by Wheaton as a migrant in Ohio.

108-242-(614). *Tringa minutilla* Vieill. LEAST SANDPIPER.

Common in spring and fall; April and Sept.; "throughout the state" (A. H. Boies); Jerome Trombley reports it very rare in Monroe Co.; "not rare in Kalamazoo Co." (Dr. M. Gibbs); "I see it often in flocks in spring and fall in Shiawassee county, about lakes" (Dr. W. C. Brownell); "migrant at Plymouth" (J. B. Purdy); "migrant in Allegan Co." (S. E. White); Mr. White also reports it at Mackinac Island; taken by E. E. Brewster, May 24, 1891, at Iron Mountain; "breeds in British America" (Dr. A. K. Fisher); "so far as we know breeds north of the United States" (H. Nehrling); "this and the preceding species breeds far north of us" (Prof. J. A. Allen).

109-243a-(624). *Tringa alpina pacifica* Coues. RED-BACKED SANDPIPER; BLACK-BELLIED SANDPIPER; AMERICAN DUNLIN.

"Migrant, not common, few taken in spring" (Dr. M. Gibbs); "breeds in Sanilac county" (W. A. Oldfield); "one bird taken at Plymouth in the spring of 1891" (J. B. Purdy); "Allegan county, migrating May 25, 1891" (S. E. White, O. and O., Vol. 16, p. 9); "migrant" (Dr. J. B. Steere); prized for food.

110-244-(625). *Tringa ferruginea* Bränn. CURLEW SANDPIPER.

Very rare visitor; one taken by the late D. D. Hughes; reported in the catalogue of Kent Scientific institute by E. L. Moseley.

GENUS EREUNETES ILL.

111-246-(612). *Ereunetes pusillus* (Linn.). SEMIPALMATED SANDPIPER.

Common; "throughout the state" (A. H. Boies); migrant; "rare in Monroe Co." (Jerome Trombley); "taken as late as June and as early as August" (Dr. M. Gibbs); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "shore of Lake Michigan during August" (Butler's Birds of Indiana).

GENUS CALIDRIS CUV.

112-248-(627). *Calidris arenaria* (Linn.). SANDERLING.

"Common migrant near Lake Erie" (Jerome Trombley); "common on the shores of the Great Lakes, migrant" (Gibbs' Birds of Michigan); "very common, in flocks, on the shore of Lake Michigan" (Butler's Birds of Indiana).

GENUS LIMOSA BRISS.

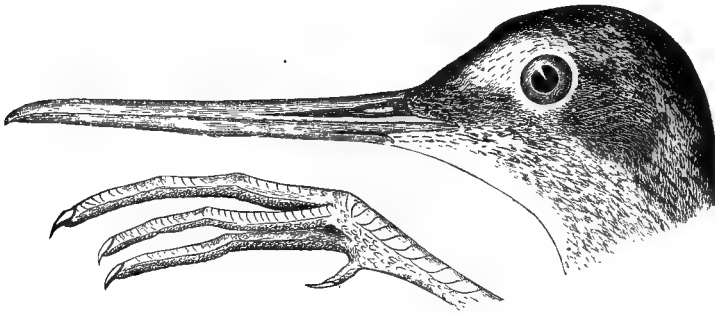
113-249-(628). *Limosa fedoa* (Linn.). MARBLED GODWIT; GREAT MARBLED GODWIT;
DOE BIRD; DOUGH BIRD. □

Rare; shores of the Great Lakes; May and Sept.; migrant; "taken near Lake Erie by gamesters (gunners)" (Jerome Trombley); "not uncommon about Lake Michigan" (Brayton); "migrant" (Dr. J. B. Steere); Davie, p. 117, says it is known to breed in Northern Ohio and Wisconsin; Prof. Ludwig Kumlein writes me that it breeds in Northern Wisconsin, and presumably in our Northern Peninsula. and Mr. H. Nehrling informs me that it breeds in Northern Michigan.

114-251-(629). □ *Limosa haemastica* (Linn.). HUDSONIAN GODWIT; LESSER DOE BIRD.

Rare; migrant; about Great Lakes; "taken near Lake Erie by gamesters" (Jerome Trombley); "not very rare about Lake Michigan" (Brayton); given doubtfully by Dr. J. B. Steere as a migrant; "taken at Niles and in Calhoun Co." (D. D. Hughes).

GENUS TOTANUS BECHSTEIN.



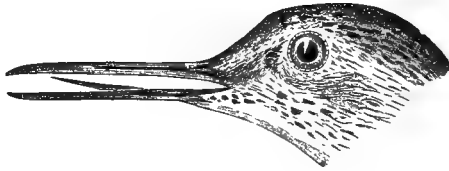
Greater Yellow Legs, natural size.

115-254-(633). *Totanus melanoleucus* (Gmel.). GREATER YELLOW LEGS; GREATER TELLTALE; GREATER TATTLER; STONE SNIPES.

Abundant; throughout the state; May and Oct.; migrant; "Keweenaw Point" (Kneeland); "common in spring at Iron Mountain" (E. E. Brewster); "common in Monroe Co." (Jerome Trombley); one of our most common long billed migrants; possibly may tarry occasionally and breed. Prof. Ludwig Kumlein writes me that this species breeds in our Northern Peninsula. Mr. H. Nehrling writes to the same effect. This and the following species are reported by Mr. A. W. Butler as breeding rarely in Northern Indiana.

116-255-(634). *Totanus flavipes* (Gmel.). YELLOW LEGS; LESSER TATTLER; YELLOW SHANKS.

Common; throughout the state; "abundant in Monroe Co." (Jerome Trombley); "Kent and Allegan counties" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); embraced in Cabot's Birds of Lake Superior; common about the college; migrant; occasionally in summer; reported as breeding; "neither this nor the preceding species breeds at Plymouth" (J. B. Purdy); eggs three or four; often occurs in flocks.



Solitary Sandpiper, natural size.

117-256-(637). *Totanus solitarius* (Wils.). *SOLITARY SANDPIPER; SOLITARY TATTLER; WAGTAIL; TIP-UP; AMERICAN GREEN SANDPIPER.

Common; May to Sept.; abundant in the marshes about the college; "common about Hillsdale" (F. M. Falconer); "rare in Monroe county but does not breed" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds northward; nests on ground; not in flocks. This bird bobs its head instead of tipping its tail.

GENUS SYMPHEMIA RAFIN.

118-258-(632). *Symphemia semipalmata* (Gmel.). WILLET; SEMIPALMATED TATTLER.

Rare; summer resident; admitted doubtfully by Dr. Steere; May to September; Dr. Atkins reports taking this bird at Locke August 13. 1885; Dr. M. Gibbs writes me that this bird has been shot at Grand Rapids; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); table bird.

GENUS BARTRAMIA LESS.

119-261-(640). *Bartramia longicauda* (Bechst.). BARTRAMIAN SANDPIPER; BARTRAMIAN TATTLER; FIELD PLOVER; UPLAND PLOVER; PRAIRIE PLOVER.

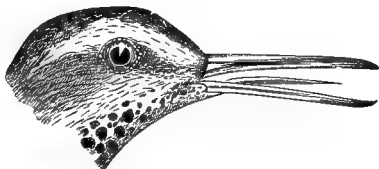
Common; April to Sept.; reported from Wayne Co.; "Lenawee Co." (A. H. Boies); breeds; "does not breed in Monroe Co." (Jerome Trombley); "nests on ground in Kalamazoo Co., eggs four" (Dr. M. Gibbs); Davie, p. 125, says it is known to breed in several portions of Michigan; nests in May on the ground; eggs four, gray or buff, specked with different shades of brown; excellent table bird. This species is embraced in Dr. Sager's list of 1839.

GENUS TRYNGITES CAB.

120-262-(641). Tryngites subruficollis (Vieill). BUFF-BREASTED SANDPIPER.

Admitted doubtfully among Michigan birds by Dr. J. B. Steere; "rare, only twice taken, Sept. 17, 1875, and Sept. 14, 1872, not yet observed in spring" (Dr. M. Gibbs); rare; migrant; prized for table; "too rare for a game bird" (Prof. Ludwig Kumlein); "taken near Lafayette, Ind., in the spring of 1892" (A. W. Butler).

GENUS ACTITIS ILL.

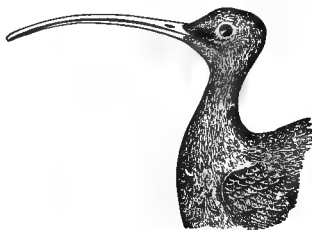


Spotted Sandpiper, natural size.

121-263-(638). Actitis macularia (Linn). *SPOTTED SANDPIPER; SANDPIPER; PEET-WEET; SPOTTED TATTLER; WAGTAIL; TIP-UP; TEETER TAIL.

Exceedingly abundant; "throughout the state" (A. H. Boies); April to Oct.; "abundant in Monroe Co." (Jerome Trombley); "Mackinac Island" (S. E. White); "very abundant at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds abundantly; nests in April, on the ground, in the garden, field or woodland; eggs four, yellowish white, with spots of muddy brown. The name, Tip-up, comes from the habit of jerking its tail which it shares with several other species. "The young are beautiful little things, and run about, soon after hatching, in a very sprightly manner" (L. S. Foster).

GENUS NUMENIUS BRISS.



Long-billed Curlew.

122-264-(643). Numenius longirostris Wils. LONG-BILLED CURLEW; SICKLE-BILLED CURLEW.

Rare; migrant; "rare near Lake Erie" (Jerome Trombley); admitted doubtfully among Michigan migrants by J. B. Steere; "breeds in the Upper Peninsula" (H. Nehrling); valuable table bird.

123-265-(645). Numenius hudsonicus Lath. HUDSONIAN CURLEW; JACK CURLEW; SHORT BILLED CURLEW.

Very rare; "only two taken to my knowledge" (Gibbs' Birds of Michigan); "never seen in Monroe Co." (Jerome Trombley); admitted doubtfully, by Dr. J. B. Steere among Michigan migrants.

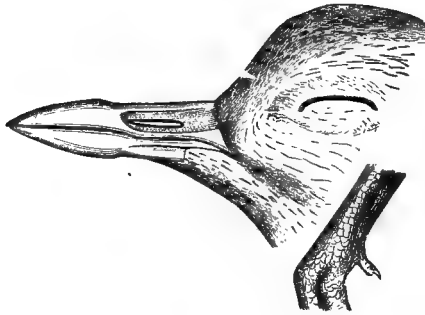
124-266-(646). *Numenius borealis* (Forst.). ESKIMO CURLEW.

Exceedingly rare; one specimen reported by Dr. M. Gibbs; admitted doubtfully by Dr. J. B. Steere; Benj. Syke, of Kalamazoo, records one as late as Oct. 28; migrant; gregarious; about marshes; excellent for table.

FAMILY CHARADRIIDÆ. PLOVERS.

Feed on insects, crustaceans, molluscs, etc.; eggs usually dark and spotted; some species valuable as game birds.

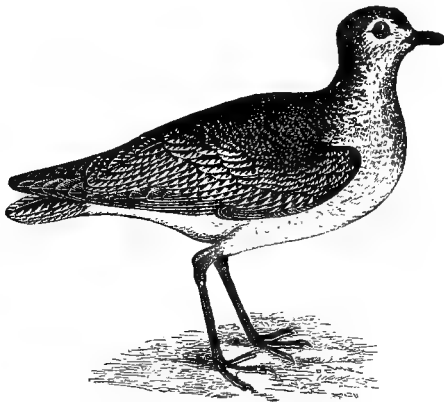
GENUS CHARADRIUS LINN.



Black-bellied Plover, natural size.

125-270-(580). *Charadrius squatarola* (Linn.). BLACK-BELLIED PLOVER: BULL-HEAD.

Rare; migrant; A. H. Boies reports it from Lenawee and Hillsdale counties; "Monroe Co." (Jerome Trombley); "once as late as Oct. 20" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "a regular migrant along the Great Lakes, Superior included" (Prof. Ludwig Kumlein).

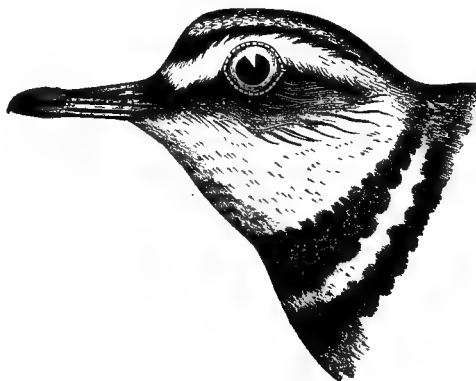


Golden Plover, in fall or winter, reduced.

126-272 (581). *Charadrius dominicus* Müll. *AMERICAN GOLDEN PLOVER; GREEN-BACK.

Common; throughout the state; April and Oct.; migrant. This bird is not mentioned by Dr. H. A. Atkins, but it has been taken here repeatedly; Mr. Jerome Trombley reports it as a common migrant near Lake Erie; "large flocks appeared at Lansing in Sept., 1890, and many were killed" (J. E. Nichols); taken at Plymouth by J. B. Purdy; "Keweenaw Point" (Kneeland); "common transient in the autumn, but rarely seen in spring, often in large flocks, most abundant about Sept. 28, in Kalamazoo Co." (Dr. M. Gibbs).

GENUS *ÆGIALITIS* BOIE.



Killdeer, natural size.

127-273-(584). *Ægialitis vocifera* (Linn.). *KILLDEER; KILLDEER PLOVER; RING PLOVER.

Very abundant; throughout the entire state; common from March to Dec.; often seen in winter; valuable as a destroyer of insects; our most common plover; frequents gardens, pastures and roadsides; "Mackinac Island" (S. E. White); "occasional at Iron Mountain" (E. E. Brewster); breeds; nests often as early as March, on the ground, usually on a knoll, in gardens and pastures; eggs four, yellowish white, spotted with dark brown. Dr. Brownell writes me that the eggs are always arranged in the form of a cross with the small or pointed ends towards the center.

128-274-(586). *Ægialitis semipalmata* Bonap. *SEMI-PALMATED PLOVER; RING PLOVER; RING NECK.

Common; migrant; May and Sept.; Jerome Trombley has taken it in Monroe Co.; "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); taken by J. B. Purdy at Plymouth; "common at Morrice" (Dr. W. C. Brownell); said to be a summer resident north. We have taken this bird here at the college in early spring. Dr. Atkins reports taking one at Locke Aug. 19, 1884; "northern part of Indiana" (Butler's Birds of Indiana).

129-277-(587). *Ægialitis meloda* (Ord). PIPING PLOVER; PIPING RING PLOVER.

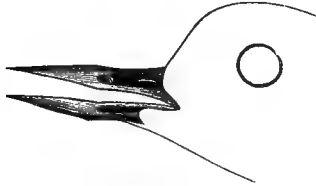
Rather rare; migrant; "rare migrant in Monroe Co." (Jerome Trombley); "I have shot it as a migrant in Allegan Co." (S. E. White); embraced in the lists of Hughes, Boies, Covert and Gibbs. These notes may refer to the next species.

130-277a-(588). *Ægialitis meloda circumcincta* Ridgw. BELTED PIPING PLOVER.

"Migrant, not common. Summer resident northward" (Butler's Birds of Indiana); "common summer resident along the shore of Lake Michigan" (Dr. Brayton). Prof. A. W. Butler thinks this species more common in Northern Indiana than the preceding. I have no positive evidence of the occurrence of this bird in our state.

FAMILY APHRIZIDÆ. SURF BIRDS AND TURNSTONES.

Feed on crustaceans, shell fish, etc.

SUBFAMILY ARENARIINÆ. TURNSTONES.**GENUS ARENARIA BRISS.**

Turnstone, natural size.

131 283-(598). *Arenaria interpres* (Linn.). TURNSTONE.

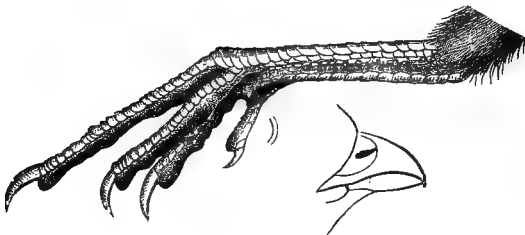
"A rare irregular migrant in Kalamazoo Co., taken once as late as May 2, showing it to be a spring migrant" (Dr. M. Gibbs); "common along Lake Michigan" (Brayton); included in Sager's list of 1839.

ORDER GALLINÆ. GALLINACEOUS BIRDS.

These birds are granivorous and possess strong claws for scratching. They include most of our domestic birds.

SUBORDER PHASIANI. PHEASANTS, GROUSE, PARTRIDGES, QUAIL, ETC.**FAMILY TETRAONIDÆ. GROUSE, PARTRIDGES, ETC.**

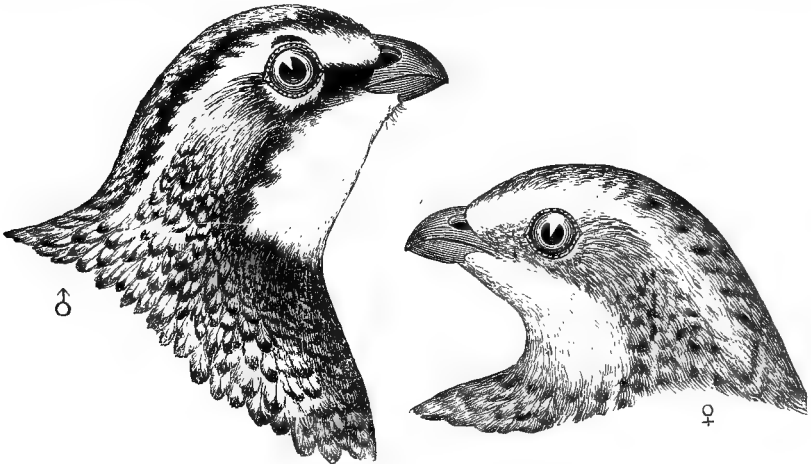
Feed on insects, grass, seeds, etc.; fine game birds; flocks; generally polygamous; do little injury, and are of immense economic importance.

SUBFAMILY PERDICINÆ. PARTRIDGES.**GENUS COLINUS LESS.**

Quail, natural size.

132 289-(571). *Colinus virginianus* (Linn.). *BOB WHITE; QUAIL; PARTRIDGE.

Very common; throughout the southern peninsula; all seasons of the year; large flocks; very tame; frequent lawns and barnyards in winter; "never seen at Iron Mountain" (E. E. Brewster); "not generally found much north of Petoskey, though two were seen on Mackinac Island. September, 1890" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests in summer, occasionally as late as September. on the ground; eggs white, pointed at one end, numerous; J. B. Purdy has taken



Quail, male and female, natural size.

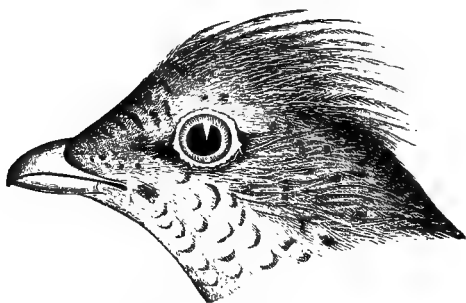
twenty-one eggs from a single nest; "I took thirty-eight eggs from one nest" (Dr. W. C. Brownell); prized as a game bird; very useful in destroying insects, seeds of weeds, etc.; this species has been temporarily protected in our state; "so excellent a friend should be permanently protected" (Prof. Jas. Satterlee); "more common in Monroe county than it was ten years ago" (Jerome Trombley). The name partridge is used south and east.

GENUS DENDRAGAPUS ELLIOT.

133-298-(555). *Dendragapus canadensis* (Linn.). CANADA GROUSE; SPRUCE PARTRIDGE.

Common north; I have it from Ionia Co.; taken in winter; "formerly very abundant in all the scrub pine thickets in the northern counties, very tame and stupid, and so, easily exterminated" (C. J. Davis); "does not inhabit the shore counties of Northwestern Michigan, I only find it near Higgins and Houghton Lakes" (Dr. M. L. Leach); "common at Au Sable" (N. A. Eddy in O. and O., Vol. IX. p. 41); "Upper Peninsula" (A. H. Boies); "rare on Keweenaw Point" (Kneeland); "occasional at Iron Mountain" (E. E. Brewster and S. E. White); "not found in Kalamazoo Co., but common north" (Dr. M. Gibbs); Dr. W. C. Brownell took a straggler in Washtenaw Co. in the fall of 1887; included in Sager's list of 1839, and Cabot's of 1850; breeds in the northern part of the state. I have reports of its breeding in the Northern Peninsula; "I know that it breeds in Northern Michigan and the Northern Peninsula" (Prof. Ludwig Kumlein); "common in the Gogebic region" (H. Nehrling.)

GENUS BONASA STEPH.



Ruffed Grouse, natural size.

134-300-(565). *Bonasa umbellus* (Linn.). *RUFFED GROUSE; "PARTRIDGE," in Michigan; "PHEASANT," south.

Very common, though decreasing in number; throughout the entire state; "still abundant about Ann Arbor" (Dr. J. B. Steere); "common at Au Sable" (N. A. Eddy); "common at Iron Mountain" (E. E. Brewster); "very common at Keweenaw Point" (Kneeland); breeds; nests in June, on the ground, nests said to be often concealed by logs, etc.; "I never find them so" (Prof. Ludwig Kumlein); "always covers eggs with leaves before leaving the nest" (J. B. Purdy); I have always found the nests of eggs entirely exposed; eggs six to fifteen, usually ten to twelve, creamy white to buff, occasionally spotted with fine reddish dots; seen through the year; excellent game bird; occasionally fly into houses in autumn through windows. This bird is known by the drumming of the male with its wings, which may be heard for a long distance. This bird eats berries, nuts, especially beech nuts, and insects. In the autumn it eats many grasshoppers and such caterpillars as the oak caterpillar. *Edema albifrons*. My son, A. B. Cook, thinks that they never cover their eggs, except as they accidentally sweep the leaves over the eggs, as they take wing. The drumming, for which this bird is noted, is probably caused by the wings striking the air.

GENUS LAGOPUS BRISS.

135-301-(568). *Lagopus lagopus* (Linn.). WILLOW PTARMIGAN.

Reported from Upper Peninsula (See Gibbs' list of Michigan Birds); "habitat Minnesota" (Birds of Minnesota, Hatch, 1892, p. 162); "Keweenaw Point" (Kneeland); "south to northern New York" (Jordan); pure white in winter.

GENUS TYMPANUCHUS GLOGER.

136-305-(563). *Tympanuchus americanus* (Reich.). *PRAIRIE HEN; PRAIRIE CHICKEN; PINNATED GROUSE.

Quite common; formerly very rare here, but common in the southwestern part of the State; "formerly abundant, but now extinct at Ann Arbor" (Dr. J. B. Steere); "extinct in Monroe county for more than thirty years" (Jerome Trombley); "very common in Southwestern Michigan" (Prof. J. W. Simmons); more frequent in prairie region; seen through the year; breeds; nests in June, on the ground; nest said to be often concealed by leaves, etc.; eggs eight to fourteen, gray, often specked with brown; destroys many insects; excellent game bird; Dr. Atkins found a nest in June, 1879; he reports them very common at Locke in January, 1878; embraced in Sager's list of 1839; "should be carefully protected, as it is a valuable friend to the farmer" (Dr. A. K. Fisher).

FAMILY PHASIANIDÆ. PHEASANTS; ETC.

Large fine game birds, gregarious, polygamous.

SUBFAMILY MELEAGRINÆ. TURKEYS.

GENUS MELEAGRIS LINN.

137-310-(554). *Meleagris gallopavo* Linn. *WILD TURKEY.

Once very common; "none observed in Upper Peninsula" (A. H. Boies); formerly large flocks were seen on the college farm; now extinct except north; "extinct in Mont-calm county" (Prof. Jas. Satterlee); "I do not believe there is a turkey north of an east and west line passing through Houghton Lake" (Dr. M. L. Leach); all seasons of the year; breeds; nests in May, on the ground; eggs nine to twelve, occasionally as many as eighteen, creamy white, spotted with brown; "eggs creamy white thickly spotted with small specks of rusty brown and umber" (H. Nehrling); excellent for table; Jerome Trombley reports an old bird, with brood, in Monroe county, in 1888; J. B. Purdy writes me that young were taken in Wayne in 1888, and eggs in Kent county in 1891. It is an interesting fact that this species is omitted in the excellent list of the late Dr. A. Sager. A number of fine turkeys were caught here a few years ago in a log pen into which they passed through a hole dug in the ground, underneath one side, as they picked up corn which was placed in this trench. Once in the pen, they only looked up, and so they were successfully caged.

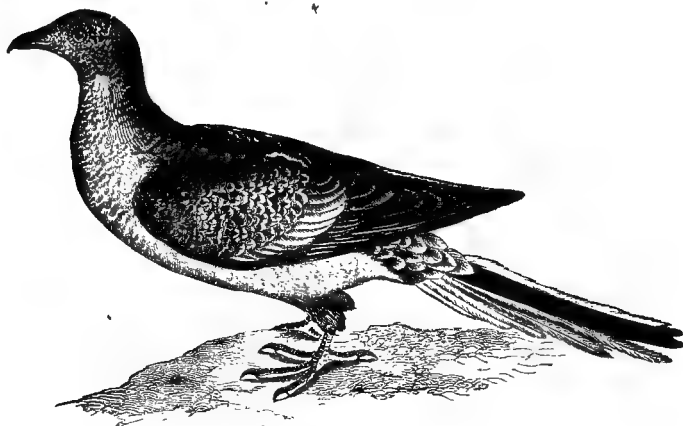
ORDER COLUMBÆ. PIGEONS.

FAMILY COLUMBIDÆ. PIGEONS AND DOVES.

These birds are granivorous, as well as insectivorous.

GENUS ECTOPISTES SWAIN.

★



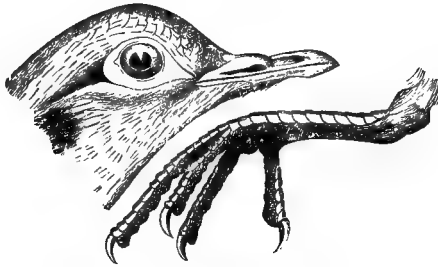
Wild Pigeon, reduced.

138-315-(543). *Ectopistes migratorius* (Linn.). *WILD PIGEON; PASSENGER PIGEON.

Once very common, now equally rare; as a boy I saw immense flocks in Shiawassee

Co., so large as to nearly cloud the sky; "became extinct at Ann Arbor about 1875" (Dr. J. B. Steere); "I have seen flocks of from 30 to 80 in Kent Co." (S. E. White); "became extinct in Monroe Co. in 1885" (Jerome Trombley); "last seen at Morrice in 1881, when I shot 52" (Dr. W. C. Brownell); reported from Benzie and Presque Isle counties; "Mackinac Island" (Dr. M. Gibbs); "seen at Keweenaw Point as early as May 4" (Kneeland); March to Oct., sometimes taken in winter; formerly bred in all parts of the state, abundantly north; large breeding roosts formerly at Shelby, Mich. (Forest and Stream, Vol. XIV, pp. 231, 232); nest and eggs similar to those of the next species, except that this one nests in colonies and "lays one egg at a sitting" (Dr. M. Gibbs); valuable for table; destroys grain. For interesting description of this bird in Michigan see article by Mr. Wm Brewster, in Auk, Vol. VI, Oct., 1889, p. 285; and for description of its breeding and migration in Michigan, see article in Scientific American, Vol. XLII, 1883, p. 343.

GENUS ZENAIIDURA BONAP.



Carolina Dove, natural size.

139-316-(544). *Zenaidura macroura* (Linn.) *MOURNING DOVE; CAROLINA DOVE.

Very common; throughout the state; found in all months, but rare in winter; during this very cold winter of 1892-3 several of these birds have been seen daily about my corn crib; "Mackinac Island" (S. E. White); "from May to Sept." (J. B. Purdy); breeds; nests in May, R. H. Wolcott found a nest July 18, 1892, in low bushes, in low trees, in orchards, on fences, rarely on the ground, often close to house, while the pigeon prefers dense woods; eggs two, white. These birds are often seen along the roadside and in barnyards.

ORDER RAPTORES. BIRDS OF PREY.

Strong, carnivorous, with hooked beaks and strong talons.

SUBORDER SARCORHAMPHI. AMERICAN VULTURES.

FAMILY CATHARTIDÆ. AMERICAN VULTURES.

Birds of Prey and carrion eaters; valuable as scavengers.

GENUS CATHARTES ILLIGER.

140-325-(537). *Cathartes aura* (Linn.) TURKEY VULTURE; TURKEY BUZZARD.

Very rare; E. L. Moseley, who has lived twenty summers in Branch county, has

never seen one in Michigan; F. M. Falconer writes me "not very rare in the spring of 1892, at Hillsdale"; "throughout the state" (A. H. Boies); embraced in Fox's list of 1853 of Birds about Detroit; Mr. L. W. Watkins tells me that they are common in Jackson and Washtenaw counties every year; they are never seen here; Dr. Atkins makes no mention of them; C. J. Davis, Lansing, Michigan, has one in his collection taken at Fowlerville, Livingston Co.; "becoming more common each year" (Dr. M. Gibbs); Prof. J. W. Simmons has taken them in Van Buren Co.; Geo. D. Sones, of Fresno, Cal., writes me that he took them at Ross, Kent Co., in 1886 and 1887; "more common than formerly in Wayne Co." (J. B. Purdy); "rare in Monroe Co., where a nest with two young was taken at Petersburg, in June, 1890" (Jerome Trombley); "Mr. Elmer Durfee took female and two eggs in Kent Co. in 1892, in the large end of a hollow tree in a swamp" (Dr. W. C. Brownell); "breeds in Wayne and Kent counties" (J. B. Purdy); "occasional in Kent Co., two eggs were taken by me in 1891, in Allegan Co., the only ones taken in the state" (S. E. White).

SUBORDER FALCONES. VULTURES; FALCONS; HAWKS, ETC.

FAMILY FALCONIDÆ. VULTURES; FALCONS; HAWKS, ETC.

Diurnal birds of prey; feed on mice, insects and other birds; like the owls, beneficial, as determined by extensive research by United States government investigators; most of the species feed almost exclusively on mice and insects; (See "Hawks and Owls of the United States in their Relation to Agriculture," by Dr. A. K. Fisher, Department of Agriculture, Washington, 1893); eggs, like those of the owls, nearly spherical, usually specked.

SUBFAMILY ACCIPITRINÆ. KITES; BUZZARDS; HAWKS, ETC.

GENUS ELANOIDES VIEILL.

141-327-(493). *Elanoides forficatus* (Linn.). SWALLOW-TAILED KITE.

Said to occur in Michigan; probably an accidental straggler, as the bird is a great wanderer; reported in our fauna by the late D. D. Hughes; a pair shot in Monroe Co., June 19, 1882 (see Bulletin of Nuttall Ornithological Club, Vol. VIII, Oct., 1882, p. 250). The late Mr. Collins secured a specimen near his home in Detroit.

GENUS ELANUS SAVIG.

142-328-(492). *Elanus leucurus* Vieill. *WHITE-TAILED KITE; BLACK-SHOULDERED KITE.

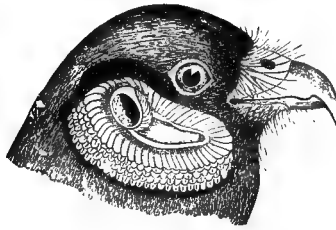
Very rare; Dr. H. A. Atkins reports taking it at Locke, Ingham Co.; Mr. S. E. White writes me that he took one in Kent Co., April 10, 1888, and has the specimen; Mr. A. B. Covert reports taking two specimens in Washtenaw Co.; "extremely doubtful, are the specimens preserved?" A. K. Fisher.

GENUS ICTINIA VIEILL.

143-329-(491). *Ictinia mississippiensis* (Wils.). MISSISSIPPI KITE.

Said to occur in Michigan; exceedingly rare; the late Hon. D. D. Hughes reported one specimen from Cass Co.; Prof. A. W. Butler gives it as a rare visitor in Northern Indiana.

GENUS CIRCUS LAPEDE.



Ear parts of Circus.

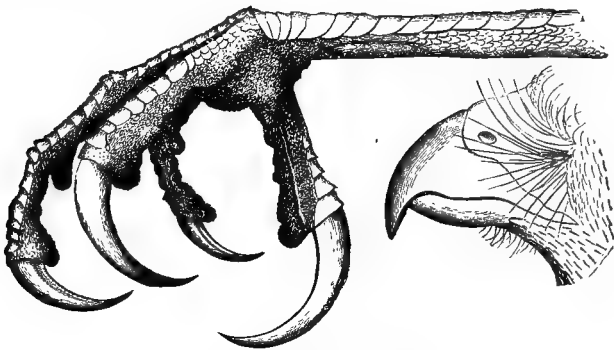
144-331-(489). *Circus hudsonius* (Linn.). *MARSH HAWK; MOUSE HAWK; HARRIER.

Abundant; throughout the State; summer resident; "common in Monroe county" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests on the ground; eggs three to six, greenish white, often spotted with brown. We have taken the nests and young at this place. "This valuable bird should be protected by law" (J. B. Purdy).

GENUS ACCIPITER BRISS.

145-332-(494). *Accipiter velox* (Wils.). *SHARP-SHINNED HAWK.

Common; throughout the state; April to August; occasional in winter; "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "Mackinac Island" (S. E. White); probably breeds; Dr. M. Gibbs writes me that it is not known to breed in Kalamazoo county; nests in trees high up from the ground; eggs three to five, rarely seven; "a single bird has been known to lay seventeen eggs in succession" (A. W. Butler), bluish or greenish white, spotted at large end with brown. This is one of our most common small hawks, it is brave and takes toll of the fancier; "this and the following species are the only two common hawks that are injurious" (Dr. A. K. Fisher); "too small I think to be classed as a chicken hawk" (Prof. Ludwig Kumlein); "I have seen it kill chickens" (S. E. White).



Cooper's Hawk, natural size.

146-333-(495). *Accipiter cooperi* Bonap. *COOPER'S HAWK; CHICKEN HAWK.

Very common; throughout the state; May to October; E. L. Moseley shot one at Grand Rapids March 27, 1886; "Mackinac Island" (S. E. White); "Keweenaw Point"

(Kneeland); breeds; nests in May in trees; "took set of five eggs at Plymouth, April 24, 1892" (J. B. Purdy); "breeds commonly in Kent county" (S. E. White); F. M. Falconer took two eggs from a nest in the spring of 1892, and later took five from the same nest; "K. R. Willhelm of Kalamazoo climbed to nine nests from twenty to forty-five feet high in one day and secured twenty-three eggs" (Dr. M. Gibbs); eggs two to six, undistinguishable from those of the Marsh Hawk; free to visit poultry yards. I have known one to dart down and carry off a chicken within a rod of where I stood; Dr. A. K. Fisher, than whom there is hardly better authority, writes me: "The true Hen Hawk, quite injurious, destroys pigeons and poultry, probably the only common harmful hawk." Prof. A. W. Butler writes me to the same effect. It is sometimes known as blue hawk, blue darter (South) and blue-tailed hawk.

147-334-(496). *Accipiter atricapillus* (Wils.). AMERICAN GOSHAWK.

Occasionally seen in summer; more frequently in winter; more common north, where it breeds; Dr. M. Gibbs writes me that it surely breeds in Wexford Co.; one in our museum from Berrien Co.; taken by A. H. Boies in Hillsdale Co., and by S. E. White in Kent Co., and Mackinac Island; one killed north by Elmer Durfee; Mr. Levi Broas has a fine one in his collection taken by him in Ionia Co.; "this and the two preceding species are the most harmful of the hawks, the others rarely prey upon poultry" (Prof. J. A. Allen).

GENUS BUTEO CUV.



Red-tailed Hawk, natural size.

148-337-(516). *Buteo borealis* (Gmel.). *RED-TAILED HAWK; RED-TAILED BUZZARD; HEN HAWK.

Very common; throughout the state; "Iron Mountain" (E. E. Brewster); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); this and the next species are among our most common hawks; "this species and the Red-shouldered are very valuable in destroying noxious rodents and insects, and when hard pressed, take a few of

the less active fowls" (Dr. A. K. Fisher); seen soaring high up in the air; "less common than the next species at Morrice" (Dr. W. C. Brownell); found at all months, "but not common in winter, indeed much less so than the next species" (E. L. Moseley); breeds; Mr. K. R. Willhelm has taken over 150 eggs in Kalamazoo Co. in four years; nests in March and April, in high trees; nest very large; eggs two to four, white, often soiled, nearly always spotted with reddish brown. This is the common Hen Hawk of the farmers.

149-339-(520). *Buteo lineatus* (Gmel.). *RED-SHOULDERED HAWK; RED-SHOULDERED BUZZARD; HEN HAWK.

Very abundant; throughout the state; March to Sept.; occasional in winter; "Mackinac Island" (S. E. White); general and nesting habits and eggs much as in the preceding species except the eggs are a trifle smaller and more coarsely specked; B. Swales has taken a set of five eggs; K. R. Willhelm has robbed over ninety nests in Kalamazoo Co. Dr. A. K. Fisher states that both of these species are our friends; Prof. Ludwig Kumlein writes me that this and the last species rarely take poultry, if they ever do.

150-342-(523). *Buteo swainsoni* Bonap.. SWAINSON'S HAWK.

Exceedingly rare; one killed by A. H. Boies in Hillsdale Co.; one killed in Genesee Co., where it was identified by Dr. M. Miles (Miles' Birds of Michigan, p. 231); Mr. Jerome Trombley writes me that he has taken the nest and eggs in Monroe Co.; "the food of this bird is largely composed of locusts" (L. S. Foster).

151-343-(524). *Buteo latissimus* (Wils.). BROAD-WINGED HAWK.

Common; summer resident; "common at Ann Arbor" (Dr. J. B. Steere); "Hillsdale and Lenawee counties" (A. H. Boies); "a retired bird, found only in deep woods" (Dr. M. Gibbs); E. E. Brewster thinks this species rather common at Iron Mountain; "Mackinac Island" (S. E. White); breeds; Dr. Gibbs took the eggs near Kalamazoo, May 27, 1875; nests and eggs taken by Jerome Trombley at Petersburg, in Monroe Co., where it is not uncommon; S. E. White writes that he took nest and four eggs in Kent Co., June 25, 1891; Dr. A. K. Fisher writes that it destroys myriads of locusts. These hawks sometimes occur in flocks of several hundred during autumnal migrations" (Prof. Ludwig Kumlein).

GENUS ARCHIBUTEO BREHM.

152-347a-(525). *Archibuteo lagopus sancti-johannis* (Gmel.). *AMERICAN ROUGH-LEGGED HAWK.

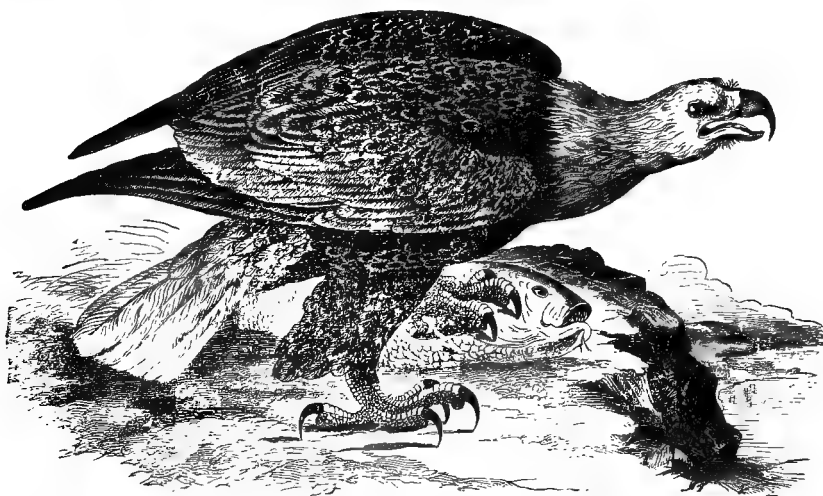
Rare; Sept. to May; Dr. Atkins reports finding a nest in Locke, May 18, 1876, which was doubtless an error; "they do not breed in the United States" (Dr. A. K. Fisher); "one specimen taken at Plymouth in fall of 1892" (J. B. Purdy); "one taken by Mr. Dempel, of Hillsdale, April 7, 1892" (F. M. Falconer); "Mackinac Island and Kent Co." (S. E. White); "Keweenaw Point" (Kneeland); "Iron Mountain Oct. 20, 1892" (E. E. Brewster); "rare and only in winter in Monroe Co." (Jerome Trombley); Prof. Ludwig Kumlein, of Milton College, Wisconsin, writes me that he has taken one nest in Dane Co., Wisconsin, and one other nest in that state with two young in it, but he thinks this species not a regular breeder in the limits of the United States. This species is embraced in Dr. A. Sager's list of 1839. "Feeds almost entirely on small rodents" (Dr. A. K. Fisher).

GENUS AQUILA BRISS.

153 349-(532). *Aquila chrysaëtos* (Linn.). GOLDEN EAGLE.

Rare; one in our museum taken in Clinton county, and one from Northern Michigan; "taken occasionally in Southern Michigan, a rare straggler from the north" (Dr. M. Gibbs); one taken in Kalamazoo Jan. 1, 1892 (R. F. Judson in O. and O., Vol. XVII, 1892, p. 9); A. H. Boies reports it from the Upper Peninsula and from Hillsdale county; "not uncommon in the Gogebic region" (H. Nehrling); Jerome Trombley has seen it at the mouth of the Raisin River in Monroe county; "taken in Kalamazoo county" (Dr. M. Gibbs); probably nests in the northern part of the state.

GENUS HALIÆTUS SAVIG.



Bald Eagle, reduced.

154-352 (534). *Haliaeetus leucocephalus* (Linn.). *BALD EAGLE.

Not rare, especially in the uninhabited regions of the north; "rare in Monroe Co., but a pair have their nest on the Raisin River near its mouth" (Jerome Trombley); all months of the year; two in our museum killed in January, one from Ingham and the other from Shiawassee county; found common at Bay City by N. A. Eddy (O. and O., Vol. IX, p. 4); "Grand Traverse county" (Dr. M. L. Leach); "common in the Upper Peninsula" (S. E. White); "quite common in the Gogebic region of the Northern Peninsula" (H. Nehrling); breeds; "a pair of young taken from nest at Byron in spring of 1892" (J. B. Purdy); "breeds in Cheneaux Islands, Mackinaw straits" (Dr. M. Gibbs); "breeds on Keweenaw Point" (Kneeland); nests in tall trees, "using the same nest year after year" (C. J. Davis); eggs two, rarely three, nearly spherical, dirty white. The late Prof. W. K. Kedzie secured two of the young here in 1868, which he reared to maturity; "I have caught them alive in steel traps mounted on top of poles" (S. E. White). We have only these two eagles in United States. The young differ so widely from the adult that many suppose that we have several species.

SUBFAMILY FALCONINÆ. FALCONS.

GENUS FALCO LINN.

155-354a-(498). *Falco rusticolus gyrfalco* (Linn.). GYRFALCON; JERFALCON.

"Said to have been taken in the state in winter" (Gibbs' Birds of Michigan);

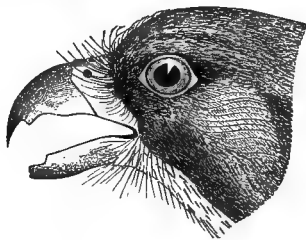
"probably on Keweenaw Point" (Kneeland); "south to the United States in winter" (Jordan). Dr. Gibbs writes me that he should retain this, as his authority was the late Dr. G. B. Wilson.

156-356-(503). *Falco peregrinus* ^{anatum} (Bonap.). *DUCK HAWK; PEREGRINE FALCON.

Rare; taken by Dr. Atkins at Locke, Nov. 2. 1881; throughout the state; "rare at Ann Arbor" (Dr. J. B. Steere); "one specimen taken in Monroe Co. in 1886" (Jerome Trombley); "two Michigan specimens in the collection of the Kent Scientific Institute at Grand Rapids" (E. L. Moseley); Davie says it has been known to breed in Michigan; rather common northward, and doubtless found in spring, summer and fall but not in winter; "breeds at Michigamme" (Davie, p. 187); "breeds on southern shore of Lake Superior" (Prof. Ludwig Kumlein). This species is given in Sager's list of 1839.

157-357-(505). *Falco columbarius* Linn. *PIGEON HAWK.

Rare; throughout the state; "occasional at Ann Arbor" (Dr. J. B. Steere); all seasons, or at least a summer resident; "taken at Grand Rapids" (E. L. Moseley); "Monroe Co., rare" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); taken by Mr. A. H. Boies in Hillsdale Co., where he has seen several; taken by Dr. Atkins in February, March and April; "breeds" (Dr. M. Gibbs); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); "may breed in northern counties, but even this is doubtful" (Prof. J. A. Allen).



Sparrow Hawk, natural size.

158-360-(508). *Falco sparverius* Linn. *AMERICAN SPARROW HAWK.

Very abundant; throughout the state; April to Sept.; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "occurs at Iron Mountain, Upper Peninsula" (L. W. Watkins); "very common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in trees which are usually decayed; eggs four to seven, nearly spherical reddish white, spotted with brown; a beautiful, but bold "and useful friend" (A. K. Fisher); kills immense numbers of mice and insects, and occasionally birds and chickens; "lives chiefly on insects" (Prof. J. A. Allen); "I doubt if this bird ever kills chickens" (Prof. Ludwig Kumlein); "I have never seen it kill a chicken, it should be protected by law" (J. B. Purdy).

SUBFAMILY PANDIONINÆ. OSPREYS.

GENUS PANDION SAVIG.

159-364 (530). *Pandion haliaëtus carolinensis* (Gmel.). *AMERICAN OSPREY; FISH HAWK.

Rather rare; "not rare at Ann Arbor" (Dr. J. B. Steere); "rare in Monroe county

but breeds near the lake" (Jerome Trombley); throughout the entire state; bird and young taken at the college in 1868; taken by Dr. Atkins at Locke, April 5, 1872; "occasional in the northern counties about the inland lakes" (C. E. Davis); "only seen at Plymouth in fall and winter, saw three at one time on an apple tree, February, 1892" (J. B. Purdy); in manuscript list of Fox; "common on Mackinac Island, several seen every day" (S. E. White); "common at Les Cheneaux Islands" (E. B. Boise); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in trees, on the ground, on rocks, etc.; nests often very bulky; eggs two to four; food fish.

SUBORDER STRIGES. OWLS.

FAMILY STRIGIDÆ. BARN OWLS.

Feed on rats, mice, insects and birds; very valuable.

GENUS STRIX LINN.

160-365-(461). *Strix pratineola* Bonap. AMERICAN BARN OWL.

"Rather rare, resident" (Gibbs' Birds of Michigan); we have never seen it here; Dr. J. B. Steere informs me that the same is true at Ann Arbor; "Sault Ste. Marie" (Chas. Bendire, Smithsonian Contribution to Knowledge, Vol. XXVIII, p. 325); one Michigan specimen reported in the catalogue of the Kent Scientific Institute by E. L. Mcseley, who writes me that though common at Sandusky, Ohio, they are exceedingly rare in Michigan; recorded by A. H. Boies in 1875. A. B. Covert in 1878 and by Dr. M. Gibbs in 1879; "has been known to breed in Tippecanoe and Clinton counties, Ind.," (A. W. Butler).

FAMILY BUBONIDÆ. COMMON OWLS.

Nocturnal birds of prey; feed on rats, mice, insects and birds; do great good. Elaborate investigations by government experts prove them to be exceedingly valuable. See "Hawks and Owls of the United States in Relation to Agriculture," by Dr. A. K. Fisher, Department of Agriculture, Washington, 1893. Eggs, like those of hawks, short and spherical. "All owls, with the possible exception of the great horned owl, and nearly all hawks should be protected by law" (J. B. Purdy).

GENUS ASIO BRISS.



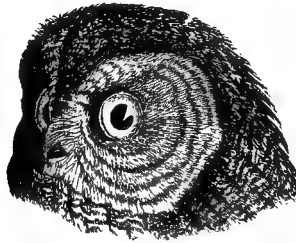
Raptorial foot of an Owl.

161-366-(472). *Asio wilsonianus* (Less.). *AMERICAN LONG-EARED OWL.

Rather rare; all seasons; "found in Hillsdale" (F. M. Falconer); A. H. Boies has taken several in Hillsdale County; "at Ann Arbor" Dr. J. B. Steere; "only seen at Plymouth in fall and winter" (J. B. Purdy); "rare in Kent County where it breeds" (S. E. White); "is common and breeds in Monroe County" (Jerome Trombley); breeds; "nests with five eggs taken in Wayne County in April and May" (B. H. Swales); "several nests taken about Kalamazoo" (Dr. M. Gibbs); nests bulky. in trees; "often lays in nests of other birds" (Samuels); eggs three to six, sometimes seven; we have taken this owl and its nests and eggs here at the college, Dr. Atkins took a specimen at Locke; one taken near Owosso November 25, 1892; "this is an efficient mouser" (A. K. Fisher).

162-367-(473). *Asio accipitrinus* (Pall.). SHORT-EARED OWL; PRAIRIE OWL.

Rather rare; "common in Hillsdale County" (F. M. Falconer); "not rare at Ann Arbor" (Dr. J. B. Steere); "taken not infrequently in Lenawee and Hillsdale Counties" (A. H. Boies); "Kent county" (S. E. White); all seasons; breeds; "nests on the ground" (Samuels). We have taken one of these birds here at the college. Dr. Atkins does not report it.

GENUS *SYRNIUM* SAVIG.

Barred Owl, reduced.

163-368-(476). *Syrnium nebulosum* (Forst.). *BARRED OWL; HOOT OWL.

Very common; throughout the State; found at all seasons; "Grand Traverse Co." (Dr. M. L. Leach); "our most common owl" (Geo. D. Sones); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in trees in March and April; eggs three, white, spherical; "Mr. A. Durfee has taken eggs from same nest for seven years" (Dr. W. C. Brownell). Like the Great Horned Owl, occasionally visits poultry houses. I think this more common than the Great Horned Owl, and, next to the Screech Owl, our most common species. Mr. A. B. Purdy finds that this owl will sit on her empty nest for some time after all eggs are taken.

GENUS *SCOTIAPTERYX* SWAIN.**164-370-(474). *Scotiapteryx cinerea* (Gmel.). GREAT GRAY OWL.**

"Rare straggler from the north" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland). I have never heard of this bird here. Mr. A. H. Boies informs me that he has noticed it in the Upper Peninsula. It is said to be partially diurnal. Brayton gives it as a rare winter visitant in Northern Indiana.

GENUS NYCTALA BREHM.

165-371-(482). *Nyctala tengmalmi richardsoni* (Bonap.). RICHARDSON'S OWL.

This bird has been taken in Ohio, Illinois and Wisconsin, and it is very likely in our Northern Peninsula fauna; "probably in winter" (J. A. Allen).

166-372-(483). *Nyctala acadica* (Gmel.). *SAW-WHET OWL; ACADIAN OWL.

Rare; found at all seasons; "rare now, but more common twenty years ago in Monroe County" (Jerome Trombley); "in swamps, at Ann Arbor, rare" (Dr. J. B. Steere); "not very rare in Lenawee and Hillsdale Counties" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds; nests in hollow stumps, etc.; "nests in Oakland County" (W. C. Brownell in O. and O. Vol. XVI, p. 22); eggs four to seven; our smallest owl; I have this from Washtenaw and Ingham Counties. Dr. Atkins took one at Locke, Dec. 18, 1882, which weighed less than two ounces; Prof. James Satterlee has taken this bird at Greenville, Montcalm County. Mr. S. E. White has taken it in Allegan County, and Mr. Gilbert White has captured the downy young in Kent County; "breeds in Northern Indiana" (A. W. Butler).

GENUS MEGASCOPS KAUP.



Screech Owl, reduced.

167-373-(465). *Megascops asio* (Linn.). *SCREECH OWL; MOTTLED OWL.

Our most common owl; "very common at Ann Arbor" (Dr. J. B. Steere); found all months of the year; in summer, it whines and moans in shade trees about our houses, in winter we take it in out-buildings where it remains by day; "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds; nests, in May, in hollow trees; eggs four to six, frequently eight, rarely nine, white, subspherical; eats insects and English Sparrows; beneficial; "food, principally mice" (Prof. Ludwig Kumlein). There are two

phases of color, the gray and the brown, the gray is usually the most common, though occasionally the reverse seems true.

GENUS BUBO CUV.



Great Horned Owl, much reduced.

168-375-(462). *Bubo virginianus* (Gmel.). *GREAT HORNED OWL; HOOT OWL.

Very common; throughout the state; all seasons; "occurs at Republic, Upper Peninsula" (L. W. Watkins); "common in Monroe Co." (Jerome Trombley); "rare at Ann Arbor" (Dr. J. B. Steere); "common in Grand Traverse Co." (Dr. M. L. Leach); "Keweenaw Point" (Kneeland); E. E. Brewster reports it from Iron Mountain; breeds; nests in February and March, in thick forests, in trees, nests of other birds especially, or in hollows of trees; "Frank Judson, of Kalamazoo, has found many nests, sometimes with a single egg, usually two, but in rare cases three" (Dr. M. Gibbs); F. M. Falconer found a nest Feb. 25, 1891, and the April following the Red-tailed Hawk occupied the same nest, each bird had occupied this nest in turn for years; eggs one to four, white, nearly spherical; two eggs taken at Plymouth March 20, 1892, by J. B. Purdy; this owl is often taken in hen houses; it should not be confused with the long-eared owl, though it is often called by that name; it is nearly as common here as the Screech and common Barred Owls. "Very valuable in rabbit infested districts, though sometimes troublesome in destroying poultry" (Dr. A. K. Fisher). One taken at the college, May 9, 1893, had entered a poultry house and destroyed three chickens. It was a large female and had only minute eggs in the ovaries.

169-375a-(463). *Bubo virginianus subarecticus* (Hoy.). WESTERN HORNED OWL.

Rare; "without doubt, as Mr. A. B. Covert says, rare or accidental in Michigan, as it occurs in Wisconsin and Northern Illinois" (A. W. Butler). It is possible that this bird and also the Arctic Horned Owl may be taken in Northern Michigan. Coues includes in No. 463 this and the sub-species *arcticus*.

GENUS NYCTEA STEPH.



Snowy Owl, reduced.

170-376-(479). *Nyctea nyctea* (Linn.). *SNOWY OWL; WHITE OWL.

Common in winter; throughout the state; ten taken in December at South Haven, by E. H. Lockwood (American Field Vol. XXVII); we have taken several at this place; unlike other owls, it is amiable in confinement; Mr. L. W. Watkins killed one at Manchester, Mich., that had pounced down on a hen in broad daylight and killed it; "common in Grand Traverse county" (Dr. M. L. Leach); "Monroe county in severe winters" (Jerome Trombley); "very rare in winter, one taken in St. Joseph county in 1892" (A. H. Boies); "Keweenaw Point" (Kneeland); "food, mammals, birds, batrachians, fish, and molluscs" (L. S. Fisher).

GENUS SURNIA DUMERIL.

171-377a-(480). *Surnia ulula caparoch* (Müll.). AMERICAN HAWK OWL.

"Rare winter visitor" (Gibbs' Birds of Michigan); Mr. A. H. Boies has taken one in St. Joseph county; "south to Wisconsin" (Jordan). We have never seen this bird here; "Eagle River on Keweenaw Point" (Kneeland); embraced in the lists of Dr. Sager (1839), Cabot's Birds of Northern Peninsula, St. Ignace (1850), Dr. Miles (1861), and Covert's Birds of Washtenaw County (1881).

ORDER PSITTACI. PARROTS; MACAWS; PAROQUETS, ETC.

Mostly tropical birds, with very hooked beaks, and claws for climbing.

FAMILY PSITTACIDÆ. PARROTS.

Feed on cockle bur, tender twigs, blossoms and young fruit of the orchard trees, fruit and grain.

GENUS CONURUS KUEL.

172-382-(460). *Conurus carolinensis* (Linn.). CAROLINA PAROQUET.

Exceedingly rare; A. H. Boies believes he saw a pair at Mallory Lake in Hillsdale county in 1860; "remarkable but hardly possible" (Dr. M. Gibbs); Dr. Robert Ridgway informs me that the National Museum collection has a specimen labeled from Michigan. Prof. Ludwig Kumlein writes me that he has shot one specimen in Jefferson county, Wisconsin, and that his father, the late Thos. Kumlein, saw them in Wisconsin in the forties; if it occur in Michigan it comes as a very rare straggler from the south; usually seen in flocks; for a very interesting article on this bird see Auk, Vol, IX, Jan., 1892, pp. 49-56, where Prof. A. W. Butler gives a very complete monograph on the distribution of this species. It is stated (p. 50) that both Audubon and Wilson reported this bird from Michigan. which is certainly conclusive.

ORDER COCCYGES. CUCKOOS.

These are climbing birds with curved, not hooked beaks.

SUBORDER CUCULI. CUCKOOS.

FAMILY CUCULIDÆ. CUCKOOS.

Feed on insects, even eating hairy caterpillars; very beneficial.

SUBFAMILY COCCYGINÆ. CUCKOOS.

GENUS COCCYZUS VIELL.



Yellow-billed Cuckoo, reduced.

173-387-(429). *Coccyzus americanus* (Linn.). *YELLOW-BILLED CUCKOO.

Formerly rather rare at this place, but now quite common; "less common in Monroe County than the next species" (Jerome Trombley); "common in Kalamazoo Co." (Dr. M. Gibbs); S. E. White reports this species very rare in Kent County; easily mistaken for the Black-billed Cuckoo; Dr. Atkins reported finding eggs of this species in the nest of the Black-billed Cuckoo; "the time of incubation of eggs, in the same set, very variable" (S. M. Falconer); breeds; I find both this and the next species nesting commonly about the college grounds; nests in trees; eggs two to six, usually four; like those of the next species only larger and a little lighter colored. We see that these birds are some like the European Cuckoo in the habit of using each others nests, which may account for the varying period of incubation.

174-388-(428). *Coccyzus erythrophthalmus* (Wils.). *BLACK-BILLED CUCKOO.

Formerly quite common at this place, but now rather rare; May to August; "very common in Kent County" (S. E. White); "very common in Kalamazoo County" (Dr. M. Gibbs); breeds; nests in June, in orchards, bushes or trees; eggs four to six, laid at intervals, blue; feed on hairy caterpillars. I have often seen them eat the Tent Caterpillar—*Clisiocampa americana*. Forbes found (see Report of Michigan Hort. Soc., 1891, p. 204) that seventy-five per cent of the food of birds of this species which he examined consisted of canker worms.

SUBORDER ALCYONES. KINGFISHERS.

Strong billed birds; food almost entirely fish.

FAMILY ALCEDINIDÆ. KINGFISHERS.

Feed on fish; found about streams; kill fish by using them as a hammer; utter a whirring note as they fly along the creek or river.

GENUS CERYLE BOIE.



Belted Kingfisher, reduced.

175-390-(423). *Ceryle alcyon* (Linn.). *BELTED KINGFISHER.

Very common; throughout the entire state; April to Sept.; "Grand Traverse Co." (Dr. M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "occasionally in mild winters in Monroe Co." (Jerome Trombley); "common all through



Syndactyle foot of Kingfisher.

the Upper Peninsula" (L. W. Watkins); "common at Iron Mountain" (E. E. Brewster); breeds; nests, in a hole four to eight feet long in banks; "nests sometimes in hollow trees" (Dr. W. C. Brownell); nests along the banks of the Red Cedar River on the college grounds; eggs six to eight, white.

ORDER PICI. WOODPECKERS.

Climbing birds, with chisel like bills and barbed tongues.

FAMILY PICIDÆ. WOODPECKERS.

Peck holes in wood in search of insects; food insects, fruit and grain; very beneficial; nest in holes formed in trees; eggs snow white.

GENUS DRYOBATES BOIE.

176-393-(433). *Dryobates villosus* (Linn.). *THE HAIRY WOODPECKER.

Very common; throughout the state; found at all seasons; "Grand Traverse Co." (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds in all parts of the state, but more common north; male aids in incubation; eggs four to five, clear white; eats borers and other insects. I have made a close study of this and the following species, and I feel certain that they are of great economic value to the pomologist. The bands used in destroying codling moth pupæ are often fairly riddled by these birds in quest of the insects which the bands conceal.



Downy Woodpecker, natural size.

177-394-(440). *Dryobates pubescens* Linn. *DOWNY WOODPECKER.

Very common; throughout the state; abundant at all seasons; "Grand Traverse county" (M. L. Leach); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); nests in June, more abundantly

north; hole for nest very smooth, almost polished; eggs four to six, small, clear white. I find, almost always, in the winter and spring, the grub of the large headed borer of the buprestid beetle, *Chrysobothrys femorata*, in the stomach of this species. This bird feeds largely on the larvæ and pupæ of the coddling moth and our numerous leaf rollers. This and the preceding species are much the same, except for size.

GENUS PICOIDES LACEP.

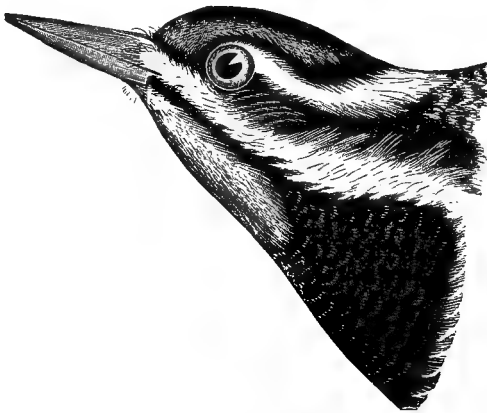
178-400-(443). *Picoides arcticus* (Swains.). ARCTIC THREE-TOED WOODPECKER;
BLACK-BACKED THREE-TOED WOODPECKER.

Very rare south; abundant near Higgins Lake and north; "not seen at Ann Arbor" (Dr. J. B. Steere); "have seen twenty in one trip through the woods at Howard City and Cadillac" (Dr. M. Gibbs); "found common in pineries by N. A. Eddy (O. and O., Vol. VII, p. 143); "I have no account of it south of Ionia County; "taken not uncommonly in Grand Traverse and Roscommon Counties" J. C. Nichols); "common in the Gogebic region" (H. Nehrling); embraced in Cabot's Birds of Lake Superior; "not rare on Upper Peninsula" (A. N. Wood in O. and O., Vol. IX, 1834, p. 62); "Keweenaw Point" (Kneeland); "common in North Michigan pineries" (Prof. Ludwig Kumlein); "common in Iron County" (S. E. White); "not rare in Grand Traverse County" (M. L. Leach); common on Saginaw Bay (N. A. Eddy in O. and O., Vol. IX, p. 5); one in collection of Dr. E. S. Holmes, Grand Rapids, was taken in Kent County. and one in the fine collection of Levi Broas, Belding, was taken in Ionia County. Without doubt this bird breeds in the northern part of this state; "I know of one instance of its breeding in Roscommon County" (Dr. W. C. Brownell); Mr. E. E. Brewster writes me that this bird is common in winter at Iron Mountain, but he cannot say that it breeds.

179-401-(444). *Picoides americanus* Brehm. AMERICAN THREE-TOED WOOD-
PECKER; BANDED-BACKED THREE-TOED WOODPECKER.

Exceedingly rare; "not rare in Northern Peninsula and Gogebic region" (H. Nehring); in Cabot's list of Birds of Lake Superior; "Keweenaw Point" (Kneeland); inserted in Gibbs' "Birds of Michigan" on the authority of A. B. Covert; "I know of no record for the state" (Dr. A. K. Fisher).

GENUS SPHYRAPICUS BAIRD.

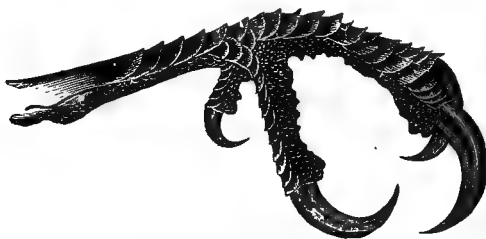


Yellow-bellied Woodpecker, natural size.

180-402-(446). *Sphyrapicus varius* (Linn.). *YELLOW-BELLIED SAPSUCKER; YELLOW-BELLIED WOODPECKER.

Quite abundant in the spring; occasional in summer; found all months from April to October; rarely seen as late as December; breeds in May and June; "often takes three weeks to peck the hole for nest, which is often found in sound ash trees" (Dr. W. C. Brownell); eggs five to seven, white; "the Sapsucker" (Butler's Birds of Indiana); "taps trees more than either the Hairy or Downy Woodpecker according to my observation" (S. E. White); "this is surely the Sapsucker par excellence at Grand Rapids" (E. L. Moseley); "I know it is a Sapsucker as I have seen it at work" (E. B. Boies); "this is the Sapsucker, not only of Indiana but everywhere" (A. W. Butler); the old ornithologists always refer to the Downy and Hairy Woodpeckers as the Sapsuckers, and I and others believe that we have seen them sucking the sap from evergreens here on the college campus. The evidence seems overwhelming that this species is the one that makes the regular holes in pine, orchard and especially maple trees, thus tapping them and coming again for the sap. (See Auk, Vol. 8, p. 256.) Mr. E. E. Brewster writes that this is common at Iron Mountain, where he has shot it as it was taking maple sap. He says that the feathers were all sticky from the sugar on them.

GENUS *CEOPHLEUS* Cab.



Pileated Woodpecker, natural size.

181-405-(432). *Ceophleus pileatus* Linn. *PILEATED WOODPECKER; BLACK WOODPECKER; LOG COCK; WOODCOCK (Michigan and Indiana).

Once common throughout the state; found at all seasons; now very rare; one seen near college in summer of 1892; "extinct at Ann Arbor" (J. B. Steere); "not seen in Monroe County since 1887, though once common" (Jerome Trombley); "rare in Kent County" (S. E. White); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "not uncommon at Iron Mountain" (E. E. Brewster); "Upper Peninsula where it probably breeds" (A. H. Boies); still common north, especially in the Northern Peninsula; confined to thick forests; our largest Woodpecker; breeds; "L. E. Reed found a nest with eggs in May, in Van Buren Co." (Dr. M. Gibbs); eggs three to six; noise from pecking heard for long distances. Until within a few years this bird was common in the forests about the college, where I have taken several.

GENUS MELANERPES SWAIN.

182-406 (453). *Melanerpes erythrocephalus* (Linn.). *RED-HEADED WOODPECKER.

Exceedingly abundant; summer resident; April, rarely March, to Sept.; occasional in winter; "often found apparently lifeless in winter, but recovers with warmth" (Dr. W. C. Brownell); throughout the state; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds abundantly; nests as usual; eggs five to six; often destroys much fruit, especially cherries; eats grain, especially corn; yet is our friend. Forbes found (Michigan Hort. Soc. Report, 1881, p. 204) that 32 per cent of the food of these birds, which he examined, consisted of canker worms. "I have seen this bird destroy the eggs of the Bluebird and Phoebe" (S. E. White).

183-409-(450). *Melanerpes carolinus* (Linn.). *RED-BELLIED WOODPECKER.

Common, though rare, except in wooded fields; Southern Peninsula; found at all seasons; common from May to August; breeds; nests in May, in holes, often twenty inches deep, usually in rotten wood; eggs four to six, glossy white. See O. and O., Vol. XVI, p. 48.

GENUS COLAPTES SWAIN.

184-412-(457). *Colaptes auratus* (Linn.). *HIGH HOLDER; FLICKER; YELLOW HAMMER; GOLDEN-WINGED WOODPECKER.

Formerly very abundant on the college campus, now less common; throughout the state; April to Sept.; occasional at all seasons; reported from Benzie and Presque Isle Counties and Thunder Bay; "very common in Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "thirty miles north of Mackinaw" (A. H. Wood, O. and O., Vol. IX, p. 62); "common at Iron Mountain" (E. E. Brewster); breeds abundantly; eggs glossy white, five to ten; if eggs are removed daily this bird will often lay as many as thirty, which we have proved at this place; J. B. Purdy in like way has taken twenty-seven from a nest; "feeds abundantly on ants, which it takes from the ground" (E. L. Moseley); "nests in holes, often of apple trees, four to six feet from the ground" (Dr. J. B. Steere); Geo. D. Sones says that this bird is often shot for the table.

ORDER MACROCHIRES. GOATSUCKERS, SWIFTS, ETC.

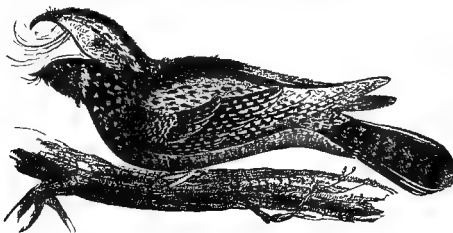
Very valuable insectivorous birds.

SUBORDER CAPRIMULGI. GOATSUCKERS, ETC.

FAMILY CAPRIMULGIDÆ. GOATSUCKERS, ETC.

Feed wholly on insects; all beneficial.

GENUS ANTROSTOMUS GOULD.



Whip-poor-will, reduced.

185-417-(397). *Antrostomus vociferus* (Wils.). *WHIP-POOR-WILL.

Common; throughout the Lower Peninsula; April to Sept.; E. E. Brewster reports it common at Iron Mountain; "Keweenaw Point" (Kneeland); "common at Traverse City, where it breeds" (L. W. Watkins); reported from Benzie and Presque Isle Counties and from Mackinac Island; breeds; nests in June, on the ground, in slight hollows or on leaves; eggs two, grayish white, spotted with varying shades of lilac; it is well known by its note at night, which gives it its common name; this note is heard at all hours of the night and at long distances.

GENUS *CHORDEILES* SWAIN.

Night Hawk, reduced.

186-420-(399). *Chordeiles virginianus* (Gmel.). *NIGHTHAWK; GOATSUCKER; BULL BAT.

Very common; throughout the state; seen flying towards nightfall; May to Sept.; "common at Traverse City" (W. L. Watkins); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds; nests as does the last species, except it nests in open fields, and often on houses in cities; "breeds at Traverse City" (L. W. Watkins); eggs two, dirty white specked with varying shades of brown and drab; often confounded with the Whip-poor-will, but has longer wings, with snowy white spots beneath, and lacks the coarse hair about the bill. Dr. Atkins reports seeing a flock with thousands of birds in August, 1868. The bird has the strange habit of darting down, when it makes a booming sound, which doubtless gave rise to one of its common names; "this bird perches lengthwise of the limb" (J. W. Simmons); Dr. J. B. Steere writes me that this highflier is often seen in cities and often commences flying early in the afternoon. He further adds that it nests on the flat roofs in the city of Detroit. Mr. J. B. Purdy writes me that this and the preceding species are becoming less abundant at Plymouth. "In the spring of 1889, many of these birds perished from starvation in Kent county. The insects for some reason were very scarce" (S. E. White).

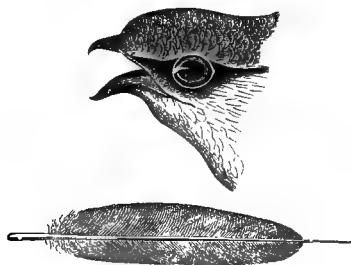
SUBORDER CYPSELLI. SWIFTS.

FAMILY MICROPODIDÆ. SWIFTS.

These birds are wholly insectivorous.

SUBFAMILY CHÆTURINÆ. SPINE-TAILED SWIFTS.

GENUS CHÆTURA STEPH.



Head and mucronate tail-feather of Chimney Swift, reduced.

187-423 (405). *Chætura pelagica* (Linn.). *CHIMNEY SWIFT; CHIMNEY SWALLOW.

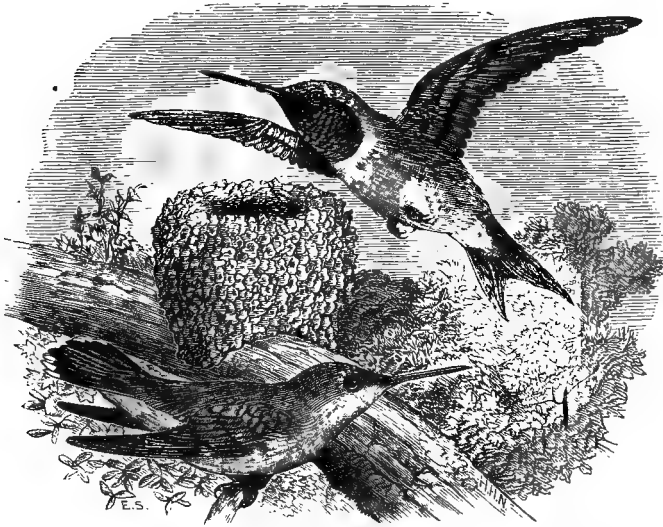
Very common; throughout the state; May to Sept.; "common at Traverse City" (M. L. Leach); I have reports that it is common at Escanaba and Bois Blanc Island; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; two or three brooded; "usually single brooded in Ohio and Indiana" (A. W. Butler); nests in chimneys, rarely in hollow trees or barns, occasionally in nests of barn swallows which are first repaired, one case reported; nests made of twigs glued with a secretion formed by the bird; eggs four to six, white; feeds wholly on insects; migrates in fall, often leaving, it is reported, young birds in the nest. These birds are often considered a nuisance in houses having large chimneys.

SUBORDER TROCHILI. HUMMINGBIRDS.

FAMILY TROCHILIDÆ. HUMMINGBIRDS.

Wholly American; chiefly from Central and South America; about five hundred species; food, insects and nectar from flowers; beautiful and valuable; Dr. M. Gibbs thinks that the food is almost wholly nectar, but I have positive proof that they are also insectivorous.

GENUS TROCHILUS LINN.



Ruby-throated Humming Bird, male and female and nest, slightly reduced.

188-428-(409). *Trochilus colubris* Linn. *RUBY-THROATED HUMMINGBIRD.

Abundant; throughout the state; common at Traverse City and Harbor Springs; E. E. Brewster reports it common at Iron Mountain and S. E. White at Mackinac Island; I have it reported from Benzie county, Escanaba and Bois Blanc Island; May to Sept.; breeds; beautiful nests in June on top of a branch and concealed by its beautiful cover of lichens; "Mr. Richard Westnedge, at Kalamazoo, has found many nests, and says that these birds often build in straggling colonies" (Dr. M. Gibbs); eggs two, white; "of six dissections, five of the stomachs exhibited many small insects" (S. E. White). Mr. J. B. Purdy has taken the nest and in six days another was built on the same apple tree by the same bird and had eggs in it.

ORDER PASSERES. PERCHING BIRDS.

Birds with weak feet, usually slight bills, mostly singers.

SUBORDER CLAMATORES. SONGLESS PERCHING BIRDS.

FAMILY TYRANNIDÆ. FLYCATCHERS.

Pre-eminent insect feeders; excellent friends.

GENUS TYRANNUS CUV.



Kingbird, reduced.

189-444-(368). *Tyrannus tyrannus* (Linn.). *KINGBIRD; BEE MARTIN; TYRANT FLYCATCHER.

Common; throughout the state; May till Sept.; I have reports of this species from Benzie County, Presque Isle, Thunder Bay and Escanaba; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in June in orchard trees, etc.; eggs three to five, cream colored, irregularly spotted with brown; kills bees, both workers and drones; does more good than harm as it kills myriads of noxious insects and usually few bees; Mr. L. W. Watkins tells me that this bird breeds at Traverse City. Prof. S. A. Forbes found (report of Mich. Hort. Soc., 1881, p. 204) that forty-two per cent of the food of several examined consisted of insects.

GENUS MYIARCHUS CAB.



Great Crested Flycatcher, reduced.

190-452-(373). *Myiarchus crinitus* (Linn.). *CRESTED FLYCATCHER; GREAT CRESTED FLYCATCHER.

Common; throughout the state; May to Sept.; "Mackinac Island" (S. E. White); rather retiring in its habits; breeds; nests in holes in fence rails, usually in hollows of trees, or old Woodpecker holes; nests often contain cast skins of snakes as a portion of the fabric, as often noticed in our state; eggs four to six, yellowish white, scratched with purple.

GENUS SAYORNIS BONAP.

191-456-(379). *Sayornis phoebe* (Lath.). *PHEBE; PEWEE; BRIDGE BIRD; HOUSE PEWEE; PEWIT FLYCATCHER.

Very common; probably throughout the entire state; "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds very abundantly; nests in May, under bridges or porches, in out houses, etc.; eggs five to seven, pure white occasionally with brown spots at large end; one of our best known and most familiar birds; its plaintive note is known to all.

GENUS CONTOPUS CAB.

192-459-(380). *Contopus borealis* (Swain.). OLIVE-SIDED FLYCATCHER.

Rather rare; throughout the Southern Peninsula; April to Aug.; "rare in Kalamazoo County" (Dr. M. Gibbs); taken by Dr. M. Gibbs in Ottawa County, May 21, 1879 (Bull. Nuttall Ornithological Club, Vol. IX, p. 186); "very common in many northern counties" (C. J. Davis); "abundant at Mackinac Island" (S. E. White); Mr. A. Durfee found a nest in Wayne County in 1889; nests in June, in trees; eggs three to five, as in next species except larger.

193-461-(382). *Contopus virens* (Linn.). *WOOD PEWEE.

Common; general in the state; May to Oct.; usually in groves, but not rare about our houses; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); E. E. Brewster reports it common at Iron Mountain; embraced in Cabot's Birds of Lake Superior; breeds; "breeds abundantly at Traverse City" (L. W. Watkins); nests in June, though occasionally as late as July or even August, in orchards, usually on horizontal limbs, the nests often beautifully covered with lichens, very rare about houses, one reported on ledge under the cornice of a house etc.; eggs three, creamy white, with spots of brown at the large end; very beneficial. The novice is likely to confuse this bird with the Phoebe; its note is very sweet and beautiful.

GENUS *EMPIDONAX* CAB.**194-463-(388). *Empidonax flaviventris* Baird. *YELLOW-BELLIED FLYCATCHER.**

Not rare; "not rare during spring migration, one taken in Kalamazoo County" (Dr. M. Gibbs); "Iron Mountain" (E. E. Brewster); Mr. S. E. White reports this species quite common at Mackinac Island at time of fall migration; said to breed in the northern part of the state; eggs usually four.

195-465-(384). *Empidonax acadiensis* (Gmel.). *ACADIAN FLYCATCHER; SMALL GREEN-CRESTED FLYCATCHER.

Abundant; usually in thick woods; May to Aug.; "in southern part of the state" (Prof. J. A. Allen); "common at Greenville" (Prof. Jas. Satterlee); "Mackinac Island" (S. E. White); breeds; nests in June at the end of limbs of trees or bushes; "nests along creeks in elder bushes, and is very shy" (Dr. W. C. Brownell); eggs two to four, usually three, color as in Wood Pewee. This bird is often mistaken for the next two species.

196-466a-(385). *Empidonax pusillus traillii* (Aud.) *TRAILL'S FLYCATCHER.

Common; "common in some localities in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); breeds; "have found twenty-five or thirty nests for several consecutive years in Dundee township" (Jerome Trombley); nests in June, usually in willows and alder bushes, beside streams; "nests in thick woods at end of beech or maple limbs" (Dr. W. C. Brownell); have not Messrs. Trombley and Brownell mistaken the Acadian for Traill's Flycatcher in the above notes? Such misidentifications are common in studying these birds; eggs four, indistinguishable from those of the Acadian Flycatcher.

197-467-(387). *Empidonax minimus* Baird. *LEAST FLYCATCHER.

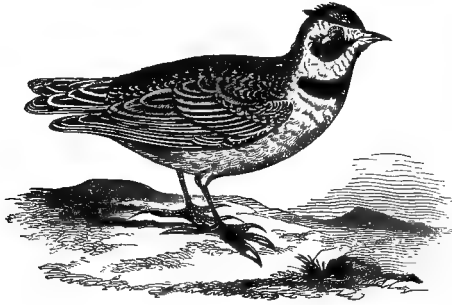
Common throughout the state; April till Sept.; "common in Hillsdale county" (A. H. Boies); "and in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); breeds; often double brooded; nest found in Wayne County by A. Durfee in 1889; nests in May, in trees in woods, occasionally in orchard and other trees, frequently close by the house; eggs four, white or creamy white. We find this species far more common here than either of the two preceding.

SUBORDER OSCINES. SONG BIRDS.

FAMILY ALAUDIDÆ. LARKS.

Insect feeders; sing on the wing.

GENUS OTOCORIS BONAP.



Horned Lark, much reduced.

198-474-(82). *Otocoris alpestris* (Linn.). *HORNED LARK; SHORE LARK.

Rather rare; irregular fall and spring visitor; "late fall in Kent County" (S. E. White); not very rare in winter; breeds in Greenland and Labrador; often seen in barn-



Horned Lark, natural size.

yards, feeding on seeds, etc.; this bird is often confused with the following subspecies, which is more common in our state. From what Dr. J. B. Steere writes me, I judge that this is the more common at Ann Arbor.

199-474b-(000). *Otocoris alpestris praticola* Hensh. *PRAIRIE HORNED LARK.

Summer resident; Jonathan Dwight, Jr., found them at Ann Arbor and Cadillac where they were breeding (Auk, Vol. VIII, p. 138); "very common at Iron Mountain" (E. E. Brewster); breeds; nests on the ground; in April or earlier; "breeds abundantly in Kent county" (S. E. White); J. B. Purdy, of Plymouth, has found eggs in nest in February; nest often surrounded by snow; may be double or triple brooded; eggs four or five, gray specked with brown; food insects and seeds. Mr. L. W. Watkins took one on eggs March 20, 1889, the nest was surrounded by snow. This subspecies and the

preceding overlap each other in this region during winter, and so are very generally confused throughout the state. The species and sub-species are thought generally to be one and the same bird.

FAMILY CORVIDÆ. CROWS, MAGPIES ETC.

Food habits rather omnivorous.

SUBFAMILY GARRULINÆ. MAGPIES AND JAYS.

GENUS CYANOICHTHA STRICKL.

200-477-(349). *Cyanocitta cristata* (Linn.). *BLUE JAY.

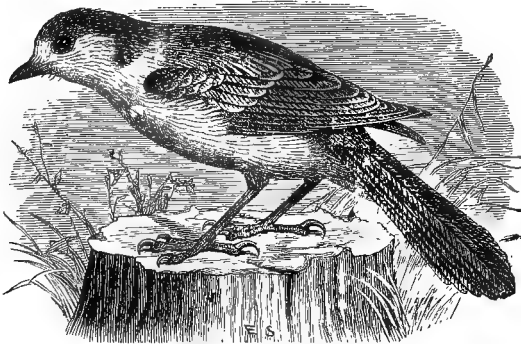
Very abundant; throughout the state; common in all seasons; reported from Presque Isle and Bois Blanc Island; "common at Grand Traverse County" (M. L. Leach); "abundant at Mackinac Island" (S. E. White); "not common on Keweenaw Point" (Kneeland); "common in Upper Peninsula" (A. H. Boies); "common at Iron Mountain" (E. E. Brewster); breeds; nests in thick foliage, especially evergreens, very rarely in barns, one case noted; eggs four to five, "six" (E. Clute and D. Reynolds), light green or drab, spotted with light brown; feeds on acorns, hazel nuts, insects, fruits, young birds and birds eggs etc.; often kills birds, especially nestlings; Dr. G. W. Torping, of DeWitt, has repeatedly seen these birds take young Sparrows and Gold Finches from the nests and then eat them; "killed a young Baltimore Oriole and took its brain, leaving the rest of the carcass" (L. W. Watkins); an English Sparrow received similar treatment from this bird, on the college campus in the spring of 1893; a rather doubtful friend; note harsh; too handsome to kill. Prof. J. A. Allen informs me that he has taken a great number of the eggs of the tent caterpillar, *Clisiocampa americana*, from their stomachs in winter in Massachusetts.

GENUS PICA CUV.

201-475-(347). *Pica pica hudsonica* (Sab.). AMERICAN MAGPIE.

Said to wander to Michigan (see Youth's Companion, December, 1892); "I have seen a few specimens taken at Eagle River" (Kneeland); Butler's Birds of Indiana, p. 113; Ridgway's Manual of North American Birds, p. 352, and Jordan's Manual of Vertebrates; "very doubtful" (Dr. A. K. Fisher).

GENUS PERISOREUS BONAP.



Canada Jay, reduced.

202-484-(359). *Perisoreus canadensis* (Linn.). *CANADA JAY.

Common from the middle of the Southern Peninsula northward; never seen in the southern part of the state; seen on our college grounds in the winter of 1893; "first seen May 17, 1876" (Dr. H. A. Atkins); it seems strange that it should occur at Locke as late as May; "common north about the logging camps" (R. H. Wolcott); A. H. Boies took a pair at Sault Ste. Marie, Oct. 20, 1892; "very abundant at Iron County, Upper Peninsula, also in the Gogebic region" (H. Nehrling); "a flock of eight were seen at Mackinac Island" (S. E. White); common in some sections of the Northern Peninsula" (Prof. Ludwig Kumlein); "common on Keweenaw Point in winter and a pest to the trappers as it steals the poisoned bait" (Kneeland); "abundant in Grand Traverse County" (M. L. Leach); taken by J. E. Nichols in the autumn of 1881 and 1883 in Roscommon, Kalkaska and Missaukee Counties; "common in Crawford County, about lumber camps" (Dudley E. Waters); Dr. Atkins reports taking this bird at Locke, May 17, 1876; "common in spring and fall, but not in summer in Iron County" (E. E. Brewster); this bird is reported to be troublesome about lumber camps, carrying off meat, etc. It doubtless breeds in the northern part of the state.

SUBFAMILY CORVINÆ. CROWS AND RAVENS.

GENUS CORVUS LINN.

203-486-(338). *Corvus corax sinuatus* (Wagl.). *AMERICAN RAVEN.

Formerly common; not rare now north; we no longer see it about Lansing; "rare but still seen at Ann Arbor" (Dr. J. B. Steere); "common at Grayling, where it nests" (Prof. L. H. Colburn); "very common on Keweenaw Point in the winter to the exclusion of the crow" (Kneeland); "throughout the Upper Peninsula" (A. H. Boies); "common but very shy in Iron County, two taken in Kent County April 8, 1888" (S. E. White); "common at Iron Mountain, Dickinson County" (E. E. Brewster); "see them occasionally in Shiawassee County, flying very high" (Dr. W. C. Brownell); "wholly gone from Greenville, Montcalm County, where it was common thirty years ago" (Prof. Jas. Satterlee); "common in Monroe County, prior to 1860, before the advent of the crow" (Jerome Trombley); this bird seems to be replaced south by the crow; feeds on carrion, acorns, etc.; Dr. Gibbs writes me that he has known of its breeding in Van Buren County, and thinks it must lay eggs as early as February. Nest and eggs much as in the next species.

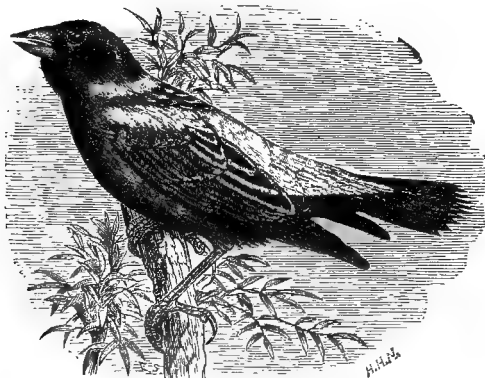
204-488-(340). *Corvus americanus* Aud. *AMERICAN CROW, COMMON CROW.

Very common; throughout the state; gregarious; seen at all seasons of the year; more rare in winter; "seen first in Monroe County in 1830, now very common, but not in winter" (Jerome Trombley); "Grand Traverse County" (M. L. Leach); "not rare at Mackinac Island" (S. E. White); common on Keweenaw Point and in the Ontonagon District" (Kneeland); "general in Upper Peninsula" (A. H. Boies); "common in summer at Iron Mountain" (E. E. Brewster); breeds; nests in large, coarse nests in trees; eggs four to six, Dr. W. C. Brownell has a set of seven, green, blotched and sprinkled with dusky brown; eats insects, frogs, carrion, acorns, eggs of birds and poultry, "especially young chickens" (O. and O., Vol. XVI, 1891, p. 64.); probably our friend.

FAMILY ICTERIDÆ. STARLINGS, BLACKBIRDS, ORIOLES.

Generally insect feeders, a few eat corn, some fruit, on the whole our friends; generally gregarious; eggs usually much speckled, often marked with zigzag or broken lines.

GENUS DOLICHONYX SWAINS.

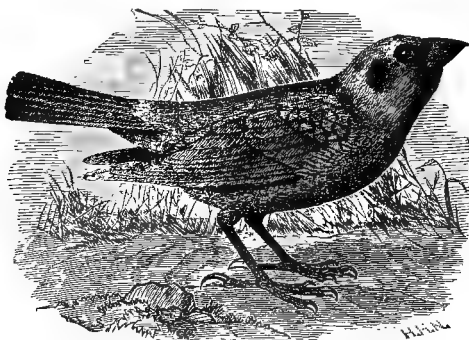


Bobolink, male, reduced.

205-494-(312). *Dolichonyx oryzivorus* (Linn.). *BOBOLINK; SKUNK BLACK-BIRD; REED BIRD; RICE BIRD; BOB LINCOLN; ORTOLAN; BUTTER BIRD.

Very common; Southern Michigan; summer; May (one of the latest birds to arrive) to September; male takes the plumage of the female in the fall; beautiful singer at nesting season; not shy; breeds; nests in June, usually in meadows, on the ground; eggs five, occasionally six to seven, bluish white, marked with dark brown specks; not in Central Michigan until within a few years; I first noticed it about the college in 1874; "first in Monroe County in 1872" (Jerome Trombley); Dr. Atkins reports it very common in 1875 but very rare until 1874 at Locke; "first seen at Plymouth forty years ago" (J. B. Purdy); Dr. G. W. Topping says that it first appeared at DeWitt in 1881, and was numerous from the first; I have reports of this bird as far north as Benzie County, in the Southern Peninsula, and Mr. E. E. Brewster, of Iron Mountain writes me that it occurs rarely at that place.

GENUS MOLOTHRUS SWAINS.



Cowbird, reduced.

206-495-(313). *Molothrus ater* (Bodd.). *COWBIRD; SAZY BIRD; COW BUNTING.

Increasingly abundant; throughout the State; March to November; insect feeder; "Keweenaw Point" (Kneeland); rests on cattle and picks flies, hence name Cowbird; often in flocks; lays its eggs "extensively" (L. S. Foster) in other birds' nests, especially in nests of Grass Finch, Chipping and Song Sparrows, Orchard Orioles, Thrushes Warblers, King Birds and Pewee; Mr. A. H. Boies thinks that this bird lays only one egg in any one nest (O. and O., Vol. IX, 1884, p. 90); Jerome Trombley has taken these eggs from the nests of thirty other kinds of birds; Prof. James Satterlee has taken eggs in Greenville, Montcalm County, from the nests of the Hermit Thrush and the Green-crested Flycatcher; Dr. Gibbs has found its eggs in the nests of the Wood Thrush, Bluebird, eight species of Warblers, Scarlet Tanager, Chewink, Traill's and Acadian Flycatchers, three species of Vireos, and five other species. R. H. Wolcott has found its eggs in the nest of Wilson's Thrush, Blue-gray Gnatcatcher, Yellow Warbler, Swamp Sparrow, Song Sparrow, Chipping Sparrow, Rose-breasted Grosbeak, Indigo Bird, Orchard and Baltimore Orioles, Wood Pewee, and once in that of the Meadow Lark; F. M. Falconer finds the eggs most frequently in the nest of the Yellow Warbler; and in two cases he has found the eggs covered over and a new set deposited; Dr. Atkins reports finding eggs in the nest of the Golden Crowned Thrush, Rose-breasted Grosbeak and Hooded Warbler; in this peculiar habit this bird is like the European Cuckoo " (usually) lays eggs in nests of small birds which have a longer period of incubation, thus giving its young the first chance and 'freezing out' the rightful possessor" (C. J. Davis); S. E. White reports this bird at Mackinac Island but only as a migrant, and E. E. Brewster writes that it is common at Iron Mountain. "A male was seen daily the winter of 1892 at Alma, Michigan, with a flock of English Sparrows." "I have seen eggs walled in in Yellow Bird's nests" (Prof. C. A. Davis). A. H. Boies has given a similar case in O. and O., Vol. IX, 1884, p. 128. For interesting article on this species by Dr. M. Gibbs, see O. and O., Vol. XV, 1890, p. 5.

GENUS XANTHOCEPHALUS BONAP.

207-497-(319). *Xanthocephalus xanthocephalus* (Bonap.). YELLOW-HEADED BLACKBIRD.

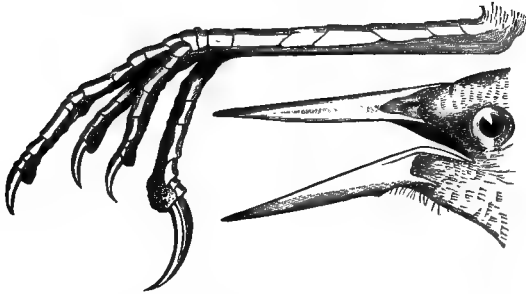
Very rare; "extreme southwestern part of the State; probably breeds" (Gibbs); "never seen at Ann Arbor" (Dr. J. B. Steere); "very doubtful if it breeds in the State" (A. H. Boies); one taken at Iron Mountain, Northern Peninsula, May 17, 1890, by E. E. Brewster; "common in Northern Wisconsin and presumably in the Northern Peninsula" (Prof. Ludwig Kumlein); "breeds in Lake County Indiana" (Butler's Birds of Indiana).

GENUS AGELAIUS VIEILL.

208-498-(316). *Agelaius phoeniceus* (Linn.). *RED-WINGED BLACKBIRD.

Exceedingly common; throughout the state; March to September; "Traverse City where it breeds" (L. W. Watkins); "common at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; two broods; nests in May, in grass clumps or low brush-wood in marshes; nests usually surrounded by water; eggs four to five, rarely six, light blue, streaked and speckled with brown or black; food insects and grain, principally corn; often seen in flocks especially in autumn.

GENUS STURNELLA VIEILL.



Meadow Lark, natural size.

209-501-(320). *Sturnella magna* (Linn.). * MEADOW LARK; MEADOW STARLING; FIELD LARK.

Exceedingly abundant; throughout the state; March to October; often seen every month in the year; "very rare at Mackinac Island, seen in July, 1889" (S. E. White); "does not occur at Iron Mountain, as I have not seen it or heard its note" (E. E. Brewster); L. W. Watkins has found it breeding at Traverse City; nests in May on the ground; eggs five to seven, white with brown spots, rarely immaculate; "often shot for game" (Geo. D. Sones).

210-501b-(322). *Sturnella magna neglecta* (Aud.). * WESTERN MEADOW LARK.

Although this is included in Covert's and Stockwell's lists, I doubt its occurrence in our state. Dr. Gibbs writes me to the same effect. Dr. Atkins states that he saw a flock September 8, 1876. Were not these immature specimens of the preceding species? Prof. J. A. Allen writes me that he thinks Dr. Atkins was mistaken in his identification. Prof. A. W. Butler identified one from Cook County, Illinois, only two counties removed from Michigan.

GENUS ICTERUS BRISS.

211-506-(324). *Icterus spurius* (Linn.). * ORCHARD OREOLE.

Common summer sojourner; rare about Lansing; "common in Kent County" (S. E. White); "very common at Greenville, Montcalm County" (Prof. James Satterlee); "very common in Cass County, where it breeds in June" (J. W. Simmons); breeds abundantly at Plymouth, and usually lays five eggs" (J. B. Purdy); taken frequently in Ionia County by Mr. Levi Broas; "common in Wayne County where it breeds" (B. W. Swales); "rare but breeds at Ann Arbor" (Dr. J. B. Steere); breeds plentifully in the southern part of the state; Dr. Atkins took a specimen May 25, 1892, at Locke, Ingham County; "nests abundantly at Manchester, often in spruce trees, nests usually pendant, but shorter than in the next species, woven closely to twigs and much concealed" (L. W. Watkins); eggs four to six, smaller than in the next species, and the dashes shorter.

212-507-(326). *Icterus galbula* (Linn.). * BALTIMORE ORIOLE; HANG NEST; FIRE BIRD.

Common; throughout the Lower Peninsula at least; "never seen at Iron Mountain" (E. E. Brewster); "I have never seen it at Mackinac Island" (S. E. White); May, rarely April, to August; "common at Traverse City, where it breeds abundantly" (L. W. Watkins); "common even in the City of Ann Arbor" (Dr. J. B. Steere); breeds; nests "purse-shaped" (L. S. Foster), suspended; "I have a nest constructed wholly of

horse hair from mane and tail of a horse" (Prof. J. W. Simmons); nests usually at the ends of limbs of tall trees (it often selects elms or the top-most limbs of orchard trees); eggs four to six, pinkish white or bluish white, scratched with brown; feeds on insects (will even eat the large tomato worm) and fruit; beautiful bird; sweet singer; next to the Scarlet Tanager this is the most showy of our common birds. I have seen these birds eat the young bark lice from linden trees in the spring, and have seen them driven away by the bees and wasps that come for the honey-dew.

GENUS *SCOLECOPHAGUS* SWAIN.

213-509-(331). *Scolecophagus carolinus* (Mill.). *RUSTY BLACKBIRD; RUSTY GRACKLE.

Abundant throughout the state; migrant; "only a migrant at Ann Arbor" (Dr. J. B. Steere); observed at Sault Ste. Marie by A. H. Boies; E. E. Brewster has taken it at Iron Mountain; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "probably breeds" (Gibbs' Birds of Michigan); may possibly breed in Northern Peninsula.

GENUS *QUISCALUS* VIEILL.

214-511d-(337). *Quiscalus quiscula æneus* (Ridgw.). *BRONZED GRACKLE; BRONZED CROW BLACKBIRD; CROW BLACKBIRD; COMMON BLACKBIRD.

March to September; exceeding abundant; throughout the state; "often in cities" (Geo. D. Sones); often in immense flocks especially in spring and fall; "decreasingly common in Monroe County" (Jereme Trombley); "Mackinac Island" (S. E. White); common at Iron Mountain" (E. E. Brewster); breeds; nests in May and June in large coarse nests in swamps, in bushes usually near the ground—R. H. Wolcott has found them in evergreens forty feet from the ground; eggs four to six, rarely seven, light blue to light brown, streaked and specked with brown and black; feeds on insects, especially white grubs, and pulls up corn and eats corn from the ear; Prof. Jas. Satterlee once found a nest in a hole in an old dead tamarack, and R. H. Wolcott reports the same from Ann Arbor, where the nest was in an old stub standing in the river. Dr. M. Gibbs writes me that he finds such nesting common in new regions where old trees are abundant.

FAMILY FRINGILLIDÆ. FINCHES, SPARROWS, ETC.

Feed on seeds and insects; our native species all beneficial. Many species are sylvan, while others frequent the cleared fields.

GENUS *COCCOTHAUSTES* BRISS.



Evening Grosbeak, reduced.

215-514-(189). *Coccothraustes vespertina* (Coop.). EVENING GROSBEEK.

Winter; rarely seen; occasionally very common; type specimen described by Cooper was from Sault Ste. Marie; E. E. Brewster reports a large flock at Iron Mountain in the winter of 1882; Mr. L. H. Colburn sent me one shot from a flock in Van Buren County in 1887; winter of 1889-90 at the college in flocks; "Ann Arbor in 1887 and 1890" (Dr. J. B. Steere); "very abundant at Alma and Saginaw in winter of 1889-90" (Prof. C. A. Davis); "several small flocks in Monroe County in winter of 1889-90" (Jerome Trombley); "attracted into houses by feeding, caught and kept in cages for two years, all males and so could not breed" (L. W. Watkins); Dr. M. Gibbs saw this bird in company with the Rose-breasted Grosbeak in Kalamazoo County in late April, 1879 (The Auk, April, 1892). For very full monograph of this bird see article by Prof. A. W. Butler in The Auk, Vol. IX, July, 1892, pp. 238-247, also "Further Notes on the Evening Grosbeak," The Auk, April, 1893, pp. 155-157. This article refers largely to observations on this species in Michigan. He shows that this bird was general in Michigan in the winter of 1890 from January to May.

GENUS PINICOLA VIEILL.

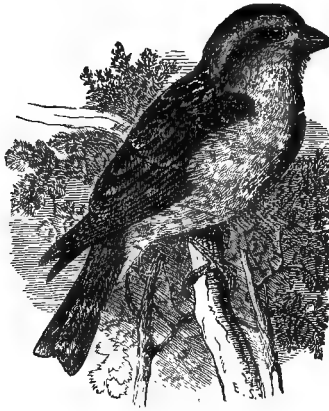


Pine Grosbeak, reduced.

216-515-(190). *Pinicola enucleator* (Linn.). *PINE GROSBEEK.

Occasional in winter; often in large flocks; "in flocks of thousands in Jackson County in 1881, where they were very tame" (Dr. H. A. Atkins); we have one in our museum from Ionia County, taken in January; "common in Bay County from November, 1883, to April, 1884" (N. A. Eddy, in O. and O., Vol. IX, p. 41); "occasionally a straggler from the north in Kalamazoo County, in winter" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "not uncommon at Iron Mountain and north, where I think it breeds" (E. E. Brewster); I was surprised to find but one in the large collection of Mr. Levi Broas, made in the northern part of Ionia County.

GENUS CARPODACUS KAUP.

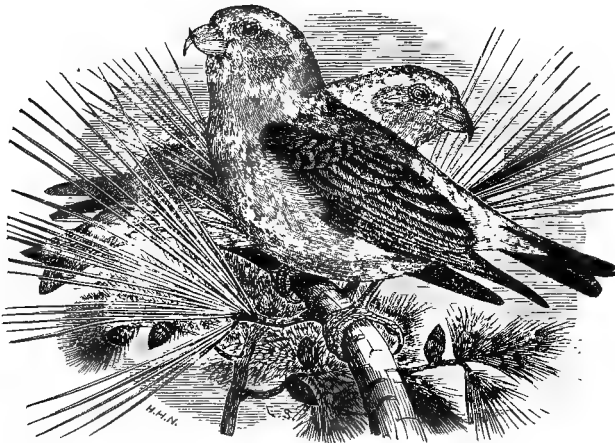


Purple Finch, male, reduced.

217-517-(194). *Carpodacus perpureus* (Gmel.). *PURPLE FINCH.

Rather common; throughout the state; flocks; usually a migrant; occasional in summer; "only a migrant at Ann Arbor" (Dr. J. B. Steere); F. L. Washburn reported a flock at Ann Arbor May 24 (The Auk, Vol. VI, p. 279); "not known in Kalamazoo in summer" (Dr. M. Gibbs); "Hillsdale and Lenawee Counties" (A. H. Boies); "does not breed in Plymouth" (J. B. Purdy); "rare in Wayne County" (B. W. Swales); "breeds abundantly at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "rare at Iron Mountain" (E. E. Brewster); occasionally breeds; nests in May, in trees, often close about houses; Mr. Howard B. Baker knew it to nest in an evergreen close by his father's house in Lansing; eggs four to five, very light dull green, speckled with dark spots; sweet singer.

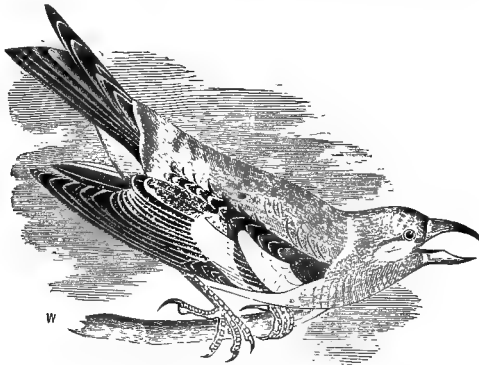
GENUS LOXIA LINN.



Red Crossbill, male and female, reduced.

218-521-(199). *Loxia curvirostra minor* (Brehm). * AMERICAN CROSSBILL; RED CROSSBILL.

Often very common; throughout the Southern Peninsula at least; winter; Nov. to May; occasional in summer; "irregular at Ann Arbor" (Dr. J. B. Steere); "only in winter and spring at Plymouth" (J. B. Purdy); "not common in Lenawee and Hillsdale Counties" (A. H. Boies); "common in Grand Traverse County" (M. L. Leach); "very common at Iron Mountain, think it breeds" (E. E. Brewster); F. M. Falconer reports it from Hillsdale in March and April, where a nest was found by Mr. Dempel March 24, 1892, in a spruce, twenty feet from the ground, and one egg taken; "summer resident at Mackinac Island, where it breeds" (S. E. White); "Keweenaw Point" (Kneeland); breeds north; "I think it nests in March or earlier" (Dr. M. Gibbs); "usually February and March" (Davie, p. 289); nests in trees; eggs three to five, greenish gray speckled with brown; Dr. Atkins reports taking the nest of this bird at Locke; he also states that he has known it to peck holes in apples to secure the seeds.



White-winged Crossbill, reduced.

219-522-(198). *Loxia leucoptera* Gmel. * WHITE-WINGED CROSSBILL.

Often common; throughout the Lower Peninsula at least; south only in winter; Dr. Atkins reports killing one at Locke, August 9, 1875; "common in Kent County in winter" (S. E. White); "uncertain winter visitor at Ann Arbor" (Dr. J. B. Steere); "one pair killed at Plymouth" (J. B. Purdy); Samuel Spicer, of Genesee County, reports finding one nesting Sept. 28, 1888 (O. and O., p. 43, 1889); "Keweenaw Point" (Kneeland); S. E. White finds it in July and August at Mackinac Island, where it probably breeds; "breeds in Northern Wisconsin and Northern Peninsula of Michigan" (Ludwig Kumlein); this bird is a rather fine singer.

GENUS ACANTHIS BECH.

220-528-(207). *Acanthis linaria* (Linn.). * REDPOLL; COMMON OR LESSER RED-POLL; REDPOLL LINNET.

Occasional winter resident; November to March or April; flocks; "irregularly abundant at Ann Arbor, there were thousands in 1888, very rare since" (Dr. J. B. Steere); "often common in Lenawee County" (A. H. Boies); "common in winter at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); I have it reported from Thunder Bay Island; very sweet singer; feeds mostly on buds and seeds, especially seeds of the arbor vitae.

221-528b-(208 part). *Acanthis linaria rostrata* (Coues.). *THE GREATER REDPOLL.

"Occasional straggler, taken in flocks of last species" (Dr. M. Gibbs). Dr. Gibbs' specimen taken at Kalamazoo was identified by Mr. Robt. Ridgway. These birds are often given as *Acanthis linaria holbaëllii*, which is without doubt an error (see Butler's Birds of Indiana, p. 69).

GENUS SPINUS KOCH.

222-529-(213). *Spinus tristis* (Linn.). *AMERICAN GOLDFINCH; YELLOW BIRD; THISTLE BIRD.

Very common; throughout the Lower Peninsula; every month in the year; more common in summer; yellow in summer, darker in autumn and winter; occasional in midwinter; in fall and winter feeds on seeds; gregarious at all seasons except while breeding; but the largest flocks occur in winter and July" (E. L. Moseley); "Grand Traverse County" (M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "Mackinac Island" (S. E. White); "not seen in Upper Peninsula" (A. H. Boies); breeds; nests in July and August; "never before July" (R. H. Wolcott); "usually as late as July and often in August and September" (Prof. Ludwig Kumlein); we have found nests with five eggs Sept. 10, one reported found Sept. 28, 1888 (O and O., Vol. XIV, 1889); nests in orchard trees and occasionally in low shrubs; eggs three to six, bluish white; Dr. H. A. Atkins and Mr. L. W. Watkins have both reared the young by putting the eggs under a common canary.

223-533-(212). *Spinus pinus* (Wils.). PINE SISKIN; PINE LINNET; PINE FINCH.

Rather rare; throughout the state; "rare at Ann Arbor" (Dr. J. B. Steere); "common in Wayne" (B. W. Swales); "transient in Monroe County, often in flocks in spring even to April and May" (Jerome Trombley); "very abundant in the pine forests north and often seen in southern counties" (Dr. M. Gibbs); winter; "killed from flocks at Iron Mountain, May 23, 1892" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common in winter in Kent County, and a summer resident on Mackinac Island" (S. E. White); Dr. Atkins reports taking it in February and twice in May; "breeds in Michigan" (Davie's Nests and Eggs of North American Birds, p. 293).

GENUS PLECTROPHENAX STEJ.

224-534-(219). *Plectrophenax nivalis* (Linn.). *SNOWFLAKE; SNOW BUNTING; WHITE SNOW BIRD.

Common, though fitful, not seen every winter; throughout the entire State; November to March; often migrant; "Lenawee and Hillsdale Counties, and common in the Upper Peninsula," (A. H. Boies); "Keweenaw Point" (Kneeland) "immense flocks at Morrice, Shiawassee County, Feb., 1893" (Dr. W. C. Brownell); "common at Iron Mountain from late October till snow flies" (E. E. Brewster); saw a flock of hundreds near Owosso, January, 1892, they would follow the manure wagon to gather seeds" (Bert B. Cook); "present in Kent county from October 28, 1890 to March 7, 1891" (S. E. White); reported from Mackinac Island; "usually does not come till snow covers the ground" (Prof. C. A. Davis).

GENUS *Calcarius* BECHST.

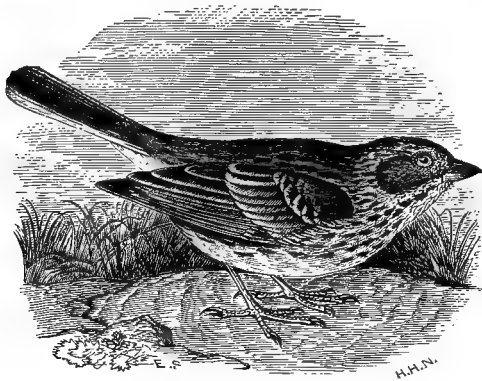
225-536-(220). *Calcarius lapponicus* (Linn.). LAPLAND LONGSPUR.

Rare; migrant; spring and autumn; often winters in Southern Michigan; "one pair killed at Plymouth" (J. B. Purdy); "generally a transient visitor from the north, occasionally spends the winter south of 43° north latitude" (Gibbs' Birds of Michigan); October to April; reported from Wayne County and Mackinac Island; "Keweenaw Point" (Kneeland); it is said to be a common spring migrant in Northern Indiana (Butler's Birds of Indiana).

226-537-(221). *Calcarius pictus* (Swain.). SMITH'S LONGSPUR; PAINTED LONGSPUR.

Reported common on the southern shore of Lake Michigan (Butler's Birds of Indiana); Dr. M. Gibbs thinks this may be found in Michigan; migrant; in flocks.

GENUS *POOCÆTES* BAIRD.

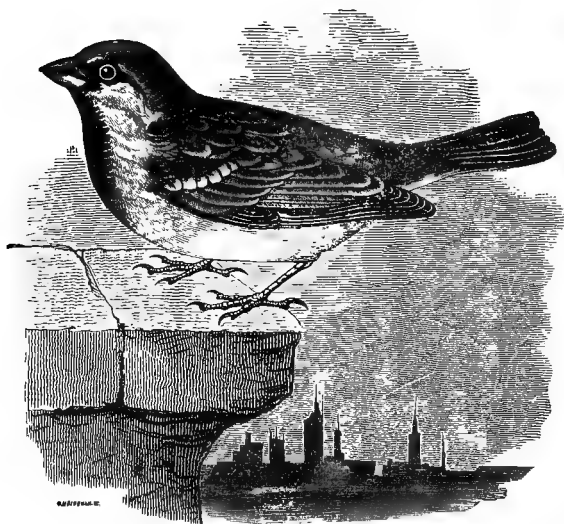


Grass Finch, reduced.

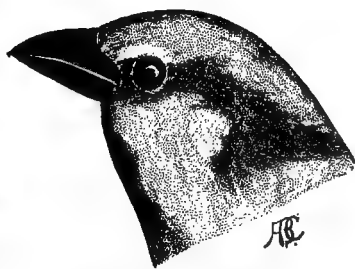
227-540-(232). *Poocætes gramineus* (Gmel.). *VESPER SPARROW; BAY-WINGED BUNTING; GRASS FINCH; GROUND BIRD.

One of our most common finches; throughout the State; April to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. W. Brewster); "Keweenaw Point" (Kneeland); "next to song sparrow our most common finch" (J. Trombley); its pretty evening song—vesper song—gives it one of its common names; breeds; two or three broods a year; nests in May, June or July, on the ground, in pasture, meadow, and by the roadside; eggs four, gray, speckled with dull brown; birds not shy; like all our native sparrows, insectivorous and valuable.

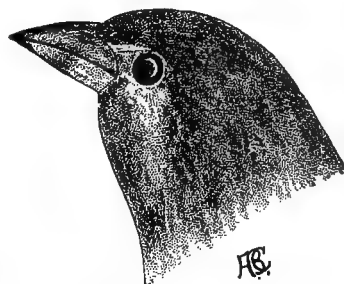
GENUS PASSER BRISS.



English Sparrow, male.



Male, nat. size original.



Female, nat. size original.

228-000-(192). *Passer domesticus* (Linn.). *ENGLISH SPARROW; EUROPEAN SPARROW; HOUSE SPARROW; PARASITE; TRAMP; HOODLUM; GAMMON; PHILIP SPARROW.

Imported species; introduced into New York in 1850; introduced into Michigan in 1879; "first seen at Hubbardston, Ionia County, 1885" (Prof. C. F. Wheeler); very common; already throughout the Lower Peninsula; more common in towns but pushing into the country; noxious species; "like the poor, always with us, at Iron Mountain" (E. E. Brewster); "already at Mackinac Island" (S. E. White); eats grain, often very extensively, especially peas, vegetables and insects; drives away our native birds; is very filthy about houses; a three cent bounty is thinning its ranks, and often, through incorrect determination, the ranks of other Sparrows, etc. (see bulletin No. 62, Michigan Experiment Station, or report of the Michigan State Board of Agriculture, 1890, p. 275); breeds abundantly; it is reported that thirty young may be reared from a single pair in a season; nests about cornices, etc., about houses and concealed places, "often in Grand Rapids in trees, the nests being bulky and open on the side" (R. H. Wolcott); eggs four or five, occasionally six, very rarely nine; soiled white speckled with brown. For full account of this bird-pest see excellent report by the United States Department of Agriculture.

GENUS AMMODRAMUS SWAIN.

229-542a-(227). *Ammodramus sandwichensis savauna* (Wils.). *SAVANNA SPARROW.

Not uncommon; migrant; Dr. Atkins took it May 10, 1882; "not sure that it breeds in Michigan" (A. H. Boies); "Monroe County, but does not breed, seeing a bird in summer is not sure proof that it breeds" (Jerome Trombley); "it is evidently a transient" (Dr. M. Gibbs).

230-546-(234). *Ammodramus savannarum passerinus* (Wils.). GRASSHOPPER SPARROW; YELLOW-WINGED SPARROW; CRICKET SPARROW.

Summer resident; southern part of the state (Prof. J. A. Allen); "breeds" (Gibbs' Bird of Michigan); "Hillsdale and Lenawee Counties" (A. H. Boies); "increasingly abundant at Plymouth" (J. B. Purdy); Jerome Trombley has found it breeding in a meadow in Monroe County; "is becoming very common as the forests are cleared off" (Dr. M. Gibbs); two of its common names come from its stridulating note.

231-547-(236). *Ammodramus henslowii* (Aud.). HENSLOW'S SPARROW; HENSLOW'S BUNTING.

Rare; Northwestern Indiana, Lake County (Butler's Birds of Indiana); included in the list of Michigan birds by both Boies and Covert. Mr. A. W. Butler thinks that this and also Leconte's Sparrow *Ammodramus leconteii* will both be found to belong to our Michigan fauna.

232-549a-(241). *Ammodramus caudacutus nelsoni* Allen. NELSON'S SPARROW; NELSON'S SHARP-TAILED FINCH.

Rare; two specimens reported taken Oct. 5, 1878, in Gibbs' Michigan Birds; reported from Northwestern Indiana, where perhaps it is a summer resident (Butler's Bird's of Indiana).

GENUS CHONDESTES SWAIN.



Lark Sparrow, natural size.

233-552-(281). *Chondestes grammacus* (Say). LARK SPARROW; LARK FINCH.

Not rare in northern part of the state; summer months; "rare and irregular at Ann Arbor" (Dr. J. B. Steere); "Sault Ste. Marie" (A. H. Boies); "rare in Monroe County, where two nests have been found" (Jerome Trombley); May to Aug.; arrives in flocks; "breeds irregularly and often very locally" (Dr. W. C. Brownell); "breeds in the Northern Peninsula" (Prof. Ludwig Kumlein); nests in June on the ground or in bushes; eggs four to six, white with irregular lines of black or brown; "locally common, breeds" (Gibbs). Dr. Atkins makes no mention of this bird but we have taken it here.

GENUS ZONOTRICHIA SWAIN.

234-554-(276). *Zonotrichia leucophrys* (Forst.). WHITE-CROWNED SPARROW; WHITE-BROWED SPARROW; WHITE-BROWED CROWNED SPARROW.

Common; throughout the entire state; May and October; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "breeds in the Northern Peninsula" (Lud-

wig Kumlein); "doubtful if it breeds in Northern Peninsula" (Dr. A. K. Fisher); migrant in Lower Peninsula; "less common in Monroe County than the White-throated Sparrow" (Jerome Trombley); solitary; "generally gregarious during migration" (Dr. M. Gibbs).



White-throated Crown Sparrow, natural size.

235-558-(275). *Zonotrichia albicollis* (Gmel.). * WHITE-THROATED SPARROW.

Abundant; throughout the entire state; September, April and May; migrant; not uncommon migrant at this place; "though a migrant at Ann Arbor, nests abundantly at Petoskey as late as July" (Dr. J. B. Steere); "common in Grand Traverse County" (M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "very abundant on Keweenaw Point" (Kneeland); "breeds freely in Northern Peninsula" (Prof. Ludwig Kumlein); "summer resident as far south as Grand Rapids" (Dr. M. Gibbs); S. E. White reports this as breeding abundantly at Mackinac Island; eggs four to five; beautiful singers; usually seen in flocks.

GENUS SPIZELLA BONAP.

236-559-(268 part). *Spizella monticola* (Gmel.). * TREE SPARROW.

Very common throughout the entire state; "often in flocks with the Junco Snow Birds; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); winter resident; October to April; flocks.

237-560-(269). *Spizella socialis* (Wils.). * CHIPPING SPARROW; CHIPPIE; HAIR BIRD.

Very common; throughout the state; April to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "not seen in the Northern Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds abundantly; nests in May and June, in orchard trees, evergreens, thorn bushes, etc., occasionally in buildings, "sometimes on the ground" (Dr. J. B. Steere); eggs three to five, bluish green with specks of black and obscure brown; migrate south in flocks; one of our best known and most friendly Sparrows.

238-561-(272). *Spizella pallida* (Swain.). CLAY-COLORED SPARROW.

"Rare in Western Indiana and Northern and Western Illinois, probably visits Michigan" (A. W. Butler); "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); "doubtful if it breeds in Northern Peninsula" (Dr. A. K. Fisher); "a very rare migrant" (A. B. Covert's Birds of Washtenaw County, Michigan).]

239-563-(271). *Spizella pusilla* (Wils.). * FIELD SPARROW.

Exceedingly abundant; throughout the entire state; "not abundant at Ann Arbor" (Dr. J. B. Steere); "rare in Wayne County" (B. W. Swales); "abundant in Monroe

County" (Jerome Trombley); from April to October; "Mackinac Island" (S. E. White); nests in May, in bushes or on the ground; eggs three to five, grayish white, specked with brown; more shy than the Chipping Sparrow. This delightful singer is a favorite with all lovers of nature.

GENUS JUNCO WAG.

240-567-(261 part). Junco hyemalis (Linn.). *SLATE-COLORED JUNCO; COMMON SNOW BIRD; JUNCO; BLACK SNOW BIRD.

Very common; flocks; winter; more common in spring; not rare in summer, north; "summer resident in Montcalm County, but a migrant at Ann Arbor" (Dr. J. B. Steere); "Monroe County from early spring to May" (Jerome Trombley); "common at Iron Mountain" (E. E. Brewster); breeds in the northern part of the state; "builds in Northern Peninsula" (H. Nehrling); "Keweenaw Point" (Kneeland); "nests at Traverse City, in excavations under logs" (L. W. Watkins); "in bushes two to six feet high" (Gibbs); "on the ground" (Coues); or "hole in stump" (Samuels); eggs four, white with reddish specks; reported by Dr. Atkins at Locke July 8, 1879, and by C. W. Gunn at Grand Rapids, a pair apparently breeding July 13, 1878 (Bull. Nuttall Ornithological Club, Vol. IV, p. 238); Mr. S. E. White says this bird may breed in Kent County, as he has taken it in June. These Snow Birds often appear in quite large flocks.

241-567a-(263). Junco hyemalis oregonus (Towns.). *OREGON JUNCO; OREGON SNOW BIRD.

"Accidental visitor" (Dr. M. Gibbs); rare; Dr. Atkins reports taking this bird twice in April. This is quite probably an error. Prof. A. W. Butler thinks these notes may refer to *Junco hyemalis shufeldti*, which has been taken at Lafayette, Ind.

GENUS MELOSPIZA BAIRD.

242-581-(244). Melospiza fasciata (Gmel.). *SONG SPARROW.

Very common; throughout the entire State; from early spring till late fall; occasional in February; "a few remain through the winter in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; "Keweenaw Point" (Kneeland); "rears two or three broods a season" (Dr. W. C. Brownell); nests in April and May and August, in bushes, occasionally ten feet high, "have been found in holes of apple trees" (Davie), or on the ground, often surrounded with snow; eggs four or five, sometimes six and very rarely seven. R. H. Wolcott reports a nest at Ann Arbor, 1892, with seven sparrow eggs and one cow bird's egg, grayish or bluish white, thinly, rarely thickly, dotted with varying shades of brown; beautiful singer; very desirable bird. This is a great favorite with all lovers of birds. I have seen these birds take the half grown bark lice clean, from the linden twigs, in early spring.

243-583-(642). Melospiza lincolni (Aud.). LINCOLN'S SPARROW.

Very rare; Dr. M. Gibbs reports two specimens taken May 1875, and September 28 and October 9, 1879, and several specimens more recently; E. L. Moseley reports one taken at Grand Rapids in 1887; "should be found breeding in Michigan" (A. W. Butler); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein).

244-584-(243). *Melospiza georgiana* (Lath.). SWAMP SPARROW.

Not rare; probably throughout the State; April and August; "common at Ann Arbor, nesting in the open swamps" (Dr. J. B. Steere); "nests freely about swampy lakes at Plymouth" (J. B. Purdy); "Southern Michigan and Upper Peninsula" (A. H. Boies); "very common in Kent County, have taken the eggs and seen thousands of the birds" (S. E. White); nests on ground usually in swamps; F. M. Falconer reports taking a nest at Hillsdale, three feet from the ground; eggs four to five, bluish or grayish white, specked with brown.

GENUS PASSERELLA SWAIN.



Fox Sparrow, natural size.

245-585-(282). *Passerella iliaca* (Merr.). *FOX SPARROW.

Common; throughout the state; migrant; "common migrant at Iron Mountain" (E. E. Brewster); "taken at Ann Arbor" (Dr. J. B. Steere); "an abundant transient" (Dr. M. Gibbs); March and April, and October and November; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); a very beautiful singer.

GENUS PIPILO VIEILL.

246-587-(301). *Pipilo erythrophthalmus* (Linn.). *TOWHEE; TOWHEE BUNTING; CHEWINK; MARSH ROBIN; GROUND ROBIN; JEWEE; JOE-WINK.

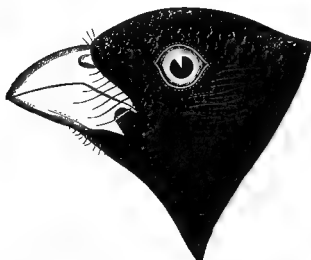
Very common; throughout the state; March to October; reported at Ann Arbor by F. L. Washburn in December (The Auk, Vol. VI, p. 279); Prof. James Satterlee saw it at Greenville the last of November, 1892; "Mackinac Island" (S. E. White); breeds; "very common at Iron Mountain" (E. E. Brewster); nests in June and July, in bushes, low trees, on grass tufts, near the ground, or on the ground. Dr. Atkins once found a nest on a beech knot, one foot from the ground; eggs three to five, very variable, usually grayish or pinkish white, specked with reddish brown.

GENUS CARDINALIS BONAP.

247-593-(299). *Cardinalis cardinalis* (Linn.). *CARDINAL; CARDINAL GROSBEAK; VIRGINIA RED BIRD.

Very rare; "never seen at Ann Arbor" (Dr. J. B. Steere); "have taken a few specimens in Hillsdale and Lenawee Counties" (A. H. Boies); "a few are seen in Monroe County every spring" (Jerome Trombley); "a pair taken in Kent County" (S. E. White); set of eggs taken at Detroit, June 19, 1892 (W. A. Davidson in O. and O., Vol. XVII, 1892, p. 111); Dudley E. Waters took a female in Kent County Aug. 10, 1883, and a male Oct. 24, of the same year. He thinks he saw a young bird. Mr. Jerome Trombley writes me that a pair have nested in Monroe for two years past.

GENUS HABIA REICH.



Rose-breasted Grosbeak, natural size.

248-595-(289). *Habia ludoviciana* (Linn.). *ROSE-BREASTED GROSBEEK; ROSE-BREASTED SONG GROSBEEK.

Common; throughout the Southern Peninsula at least; May to Sept.; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "said to be common in hard wood district about Iron Mountain, but I have not taken it" (E. E. Brewster); beautiful singer; often seen in flocks; breeds; Mr. L. W. Watkins informs me that he took a male from a nest of five eggs, on which he was sitting; nests in May and June, in orchards, tall shrubs, forest trees, etc., occasionally high up. E. B. Boies reports a nest in a thorn bush, April 19, 1891. Eggs three to five, bluish green, dotted with brown; "male often incubates" (R. H. Wolcott); very beneficial to the farmer and horticulturists, even eats potato beetles as I have observed on several occasions; Forbes says, (report State Horticultural Society, 1881, p. 204) that 66 per cent of food of many examined, consisted of canker worms; L. W. Watkins informs me that this bird nests at Manchester in low bushes, and also breeds at Traverse City; the song of this bird is delightful.

GENUS PASSERINA VIEILL.

249-598-(295). *Passerina cyanea* (Linn.). *INDIGO BUNTING; INDIGO PAINTED FINCH; INDIGO BIRD; BLUE LINNET.

Common; throughout the state; May to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); nests in May and June, in low bushes, often in gardens; eggs four, white with a bluish tinge. Prof. S. A. Forbes (Bulletin No. 3) found 78 per cent of the food of several which he examined to be canker worms.

250-600-(293 part). *Passerina versicolor* (Bonap.). *VARIED BUNTING.

Dr. Atkins reported taking this rare bird; said to have been observed in Michigan by A. H. Boies. "I think I have seen it" (Dr. Robt. Ridgway); taken by Dr. Atkins May 18, 1874, identified by Ridgway, and now in the collection of Dr. J. M. B. Sill, of Ypsilanti (Dr. Atkins in O. and O., Vol IX, 1884, p. 81).

GENUS SPIZA BONAP.

251-604-(287). *Spiza americana* (Gmel.). *DICKCISSEL; BLACK-THROATED BUNTING; LITTLE MEADOW LARK.

Very common in some localities in Southern Michigan; rare at the college; "a recent arrival" (Dr. J. B. Steere); May to August; "occasional at Ann Arbor" (Dr. J. B. Steere); "Hillsdale County" (A. H. Boies); breeds; nests usually in bushes, sometimes

on the ground; eggs four, immaculate, greenish blue; "very common at Manchester, summer of 1892, and the nests were abundant in clover fields" (L. W. Watkins); food largely insects; some examined by Prof. S. A. Forbes (Michigan Horticultural Report 1881, p. 204) showed one-half the food to be canker worms; "not known in Michigan twenty years ago, but becoming more common each year, still rarely found north of 44° north latitude" (Dr. M. Gibbs).

FAMILY TANAGRIDÆ. TANAGERS.

Highly colored, purely insectivorous.

GENUS *PIRANGA* VIEILL.

252-608-(154). *Piranga erythromelas* Vieill. *SCARLET TANAGER; BLACK-WINGED REDBIRD.

Common throughout Southern Michigan at least; May to August, occasionally to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; nests in May or June, usually on top of horizontal limb, in orchard or small trees, "from twenty to fifty feet from ground on or near ends of swaying branches" (Dr. W. C. Brownell); "often twenty or thirty feet, and rarely, as many as forty feet from the ground" (Prof. Ludwig Kumlein); "nest loose, shallow and coarse" (Prof. J. W. Simmons); eggs three to five, greenish blue spotted with brown; not only a sweet singer, but our most showy bird. Mr. Geo. D. Sones writes me that the nests are often so poorly built that the eggs may be counted from below looking up through the nests. This bird, of late, comes close to our houses on the college campus.

253-610-(155). *Piranga rubra* (Linn.). *SUMMER TANAGER; SUMMER REDBIRD.

Exceedingly rare, and only in extreme southern limit; straggler from the south; not so brilliant as the preceding species, and the male has not the black wings. E. L. Moseley reports one from Michigan; "not seen at Ann Arbor" (Dr. J. B. Steere); "never seen in Monroe County" (Jerome Trombley); if ever seen in Michigan an accidental and very rare straggler.

FAMILY HIRUNDINIDÆ. SWALLOWS.

These feed wholly on insects; are very beneficial, and very amiable toward each other.

GENUS *PROGNE* BOIE.

254-611-(165). *Progne subis* (Linn.). *PURPLE MARTIN.

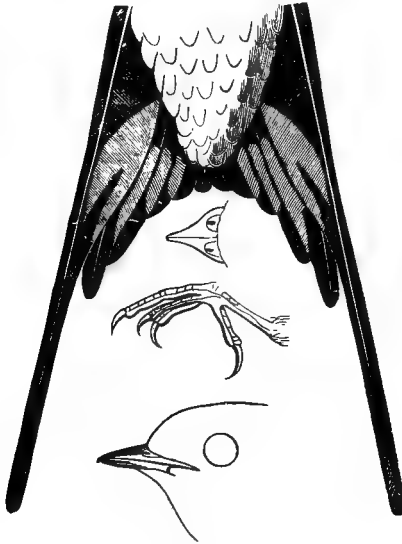
Common throughout the summer, or was so, prior to the reign of the English Sparrows; throughout the state; "rare in Monroe County" (Jerome Trombley); "common at Iron Mountain" (E. E. Brewster); "rare outside Detroit, I hunted for four years to find a set of eggs for my collection" (Dr. W. C. Brownell); "common every year at Hubbardston, where it arrives April 7th to 9th each year" (Prof. C. W. Wheeler); "rare and local in Washtenaw County" (Dr. J. B. Steere); "becoming very rare at Plymouth" (J. B. Purdy); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "nests commonly at Alma, Gratiot County, in the false fronts of stores, where it successfully combats the European Sparrow" (Prof. C. A. Davis); will oppose the European successfully for a time but will finally yield the fort; "nests in Hillsdale in the hoods over electric lights" (F. M. Falconer); breeds; nests in June, in boxes, holes in trees, etc.; eggs four to six, white; food insects, even Wasps and May Beetles.

GENUS PETROCHELIDON CAB.

255-612 (162). *Petrochelidon lunifrons* (Say). *CLIFF SWALLOW; EAVE SWALLOW; MUD DAUBER; SQUARE-TAILED BARN SWALLOW.

Very common; throughout the State; May to August; "rare and local in Washtenaw County" (Dr. J. B. Steere); "I have counted one hundred and ninety-three nests under the eaves of one barn, from which I think over two thousand young were hatched in one season." (Dr. W. C. Brownell); "occurs at Chandler's Falls, on the Escanaba river, Upper Peninsula, where it breeds" (L. W. Watkins) "Mackinac Island" (S. E. White); breeds; nests under eaves, on sides of embankments, rocks, etc., preferring the southeast or west side; nests of mud; eggs four to six, white, specked with quite large brown spots. Like other birds that nest around our farm buildings, they are being driven off by the English Sparrow. L. W. Watkins reports an entire brood of albinos.

GENUS CHELIDON FORSTER.



Generic details of Barn Swallow.

256-613 (159). *Chelidon erythrogaster* (Bodd.). * BARN SWALLOW.

Very abundant throughout the State; April to August; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests in May, in barns and other buildings; "I saw about 300 at my farm at Plymouth, Sept. 4, 1886, and not one after that date" (Dr. W. C. Brownell); two broods and sometimes three; eggs three to six, white, finely spotted with brown, especially at the large end; the tail of this bird is deeply forked. This graceful bird is justly a favorite with farmers and farmers' boys. They are often seen in large flocks just before leaving in early September.

GENUS TACHYGINETA CAB.



White-bellied Swallow, natural size.

257-614-(160). *Tachycineta bicolor* (Vieill.). *TREE SWALLOW; WHITE-BELLIED SWALLOW; BLUE-BACKED SWALLOW; FIELD SWALLOW.

Very common; throughout the state; March or April to August; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; often two broods; nests in May and June, in hollow stumps or holes in trees or buildings, "often in stubs in or near water" (Dr. W. C. Brownell); eggs four to seven, occasionally nine, white. I have taken several nests from hollow stumps, and always found them lined with pure white feathers, many of which were too large to have come from this bird.

GENUS CLIVICOLA FORST.

258-616-(163). *Clivicola riparia* (Linn.). *BANK SWALLOW; SAND SWALLOW; SAND MARTIN.

Very abundant; throughout the state; May to August; "Mackinac Island" (S. E. White); breeds abundantly; nests in May in sand banks; A. B. Covert, of Ann Arbor, once saw it nesting in a crevice of a building (does not Mr. Covert's note refer to the next species?); eggs five or six, white; these birds are very amiable, never seen quarreling; "I have found three nests in branches of one hole" (Dr. W. C. Brownell); Mr. Robt. M. Wolcott saw at White Lake, Muskegon County, July, 1891, an immense colony, numbering hundreds. The bank was very sandy and several nests had a common vestibule near the face of the bank.

GENUS STELGIDOPTERYX BAIRD.

259-617-(164). *Stelgidopteryx serripennis* (Aud.). *ROUGH-WINGED SWALLOW.

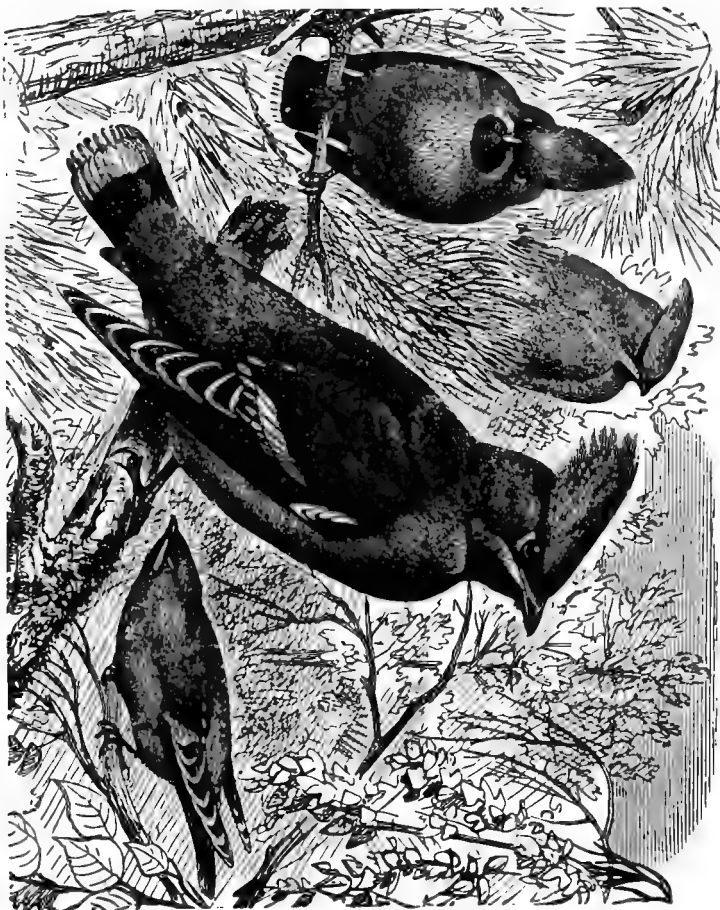
Rather common; "in the southern part of the state" (Prof. J. A. Allen); May to August; nests in May, in sand banks, or "buildings or crevices in stone walls" (A. W. Butler); eggs and food habits much as in bank swallows. Dr. Gibbs informs me that the opening to the nest is circular, and not elliptical as it always is in case of the Bank Swallow. He adds further that this bird often builds in crevices in bridges, etc.

FAMILY AMPELIDÆ. WAXWINGS, ETC.

Beautiful birds; fly in flocks; feed on seeds, insects and fruit.

SUBFAMILY AMPELINÆ. WAXWINGS.

GENUS AMPELIS LINN.



Bohemian Waxwing, one-half natural size.

260-618-(166). *Ampeis garrulus* Linn. *BOHEMIAN WAXWING.

Very rare; winter visitor; occasional in spring. Dr. G. W. Topping, DeWitt, Michigan, took from one to three in April of each of the years 1879-80-81 from flocks going north; "in flocks in Kent County nearly every spring, often as many as one hundred" (Dudley E. Waters); does not Mr. Waters refer to the next species?

Mr. Levi Broas has several in his collection, which he took in Ionia County; "seen in early spring at Bay City in 1884" (N. A. Eddy, in O. and O., Vol. IX, 1884, p. 41); Dr. Atkins took this bird at Locke several times in March and once in April; E. L. Moseley reports two from Michigan; "four seen in Kent County, April 4, 1889" (S. E. White); "often exceedingly abundant in Northern Michigan" (H. Nehrling); "several flocks seen at Charlevoix in the fall several years since" (M. L. Leach); "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); "Traverse City" (M. L. Leach). "Has been taken in southern Indiana several times" (A. W. Butler).



Cedar Bird, natural size.

261-619-(167). *Ampeelis cedrorum* (Vieill.). * CEDAR BIRD; CEDAR WAX-WING; CHERRY BIRD.

Very common; throughout the State; April to August; not rare in winter; embraced in Cabot's Birds of Lake Superior; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); migrates frequently for short distances; in flocks; breeds; nests in bushes, trees of the orchard or woodland, etc., in July and August; eggs four to six, light drab or clay white, specked with black and brown; eats cherries, apple blossoms, berries and insects, "eats three thousand canker worms daily" (Forbes report Michigan State Horticultural Society, 1881, p. 204); "I have seen them feeding extensively on canker worms" (Prof. C. A. Davis); "eat elm beetles and many other insects" (Dr. A. K. Fisher). From a preliminary report by F. E. L. Beal for the United States Department of Agriculture, manuscript kindly loaned to me, I find that 125 stomachs of these birds from 14 states were examined. The conclusions reached were these: 1st, that the Cedar Birds eat a certain amount of insect food at all times, when it can be obtained, aggregating in this case 17% of the food for the whole year; 2d, that the greatest amount of insect food is eaten during the month when fruit is the most abundant; 3d, that the greatest number of insects is eaten in the month of May, with a decrease, during the succeeding months until September, when the percentage again rises; 4th, that the young, while in the nest, are fed to a great extent upon insect food; eats mountain-ash berries, etc., in winter. These beautiful birds do not seem to be exclusively insectivorous, and a flock will destroy an immense number of cherries; Dr. M. Gibbs writes me that he has reared the young, taken from the nests, entirely on fruit.

FAMILY LANIIDÆ. SHRIKES.

Feed on insects, small birds, mice, etc., on the whole probably our friends.

GENUS LANIUS LINN.



Butcher Bird, reduced.

262-621-(186). *Lanius borealis* Vieill. * NORTHERN SHRIKE; BUTCHER BIRD.

Rather common; throughout the State; "rare at Ann Arbor" (Dr. J. B. Steere); winter; November to March or April; "occasionally in winter in Wayne County" (B. W. Swales); seen at Iron Mountain by E. E. Brewster; "Keweenaw Point" (Kneeland); "this shrike is not known to breed in United States" (Dr. A. K. Fisher); Prof. J. A. Allen thinks it may breed in Upper Peninsula; impales mice, insects, and small birds, frogs, etc., on thorns, probably for future use; "kills English Sparrows, and impales insects on barbs of wire in fences" (Dr. W. C. Brownell); Prof. Chas. A. Davis tells me that an observant friend suggests that this habit has arisen because the bird has no talons, so it hangs bird, mouse, or insect up to aid in tearing it to pieces; "all winter at Manchester, chasing and killing English Sparrows" (L. W. Watkins); these birds are reported to attract other birds by mimicry and then destroy them; Dr. G. W. Topping, Dr. W. C. Brownell, and Mr. J. B. Purdy speak of the nesting of this bird. They must refer to the White-rumped Shrike.

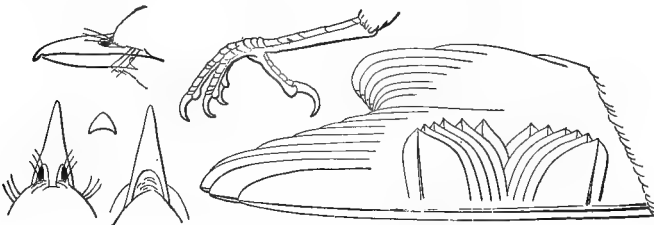
263-622a-(188 part). *Lanius ludovicianus excubitorides* (Swains.). * WHITE-RUMPED SHRIKE.

Common from April to October; "the common variety in Monroe County" (Jerome Trombley); breeds; nests in May in orchards; "nests rarely at Ann Arbor" (Dr. J. B. Steere); eggs four to six, dirty white specked with brown. These birds do destroy small birds, but as they destroy so many insects, especially locusts, they are to be considered as beneficial to the farmer. This species is often mistaken for the Loggerhead Shrike, *Lanius ludovicianus*, which species does not occur in Michigan.

FAMILY VIREONIDÆ. VIREOS OR GREENLETS.

Beautiful singers; exclusively insectivorous; very beneficial.

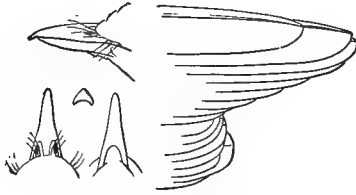
GENUS VIREO VIEILL.



Red-eyed Vireo, natural size.

264-624-(170). *Vireo olivaceus* (Linn.). *RED-EYED VIREO; RED-EYED GREENLET

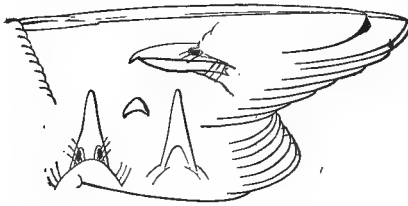
One of our most common birds; throughout the state; frequents parks and woodlands; April to September; included in Cabot's list of Birds of Lake Superior; "Mackinac Island" (S. E. White); E. E. Brewster finds this species very common at Iron Mountain; "Keweenaw Point" (Kneeland); breeds; often double brooded; nests in June on the horizontal branches of trees, usually in woodlands, occasionally in orchards; the nest is very beautiful; "nests in Traverse City" (L. W. Watkins); nests suspended below limb, not hanging like those of Orioles; eggs three to four, rarely five, white, spotted with blackish dots.



Brotherly Love Vireo, natural size.

265-626-(173). *Vireo philadelphicus* (Cass.). *PHILADELPHIA VIREO; BROTH-ERLY-LOVE VIREO; BROTHERLY-LOVE GREENLET.

Rare; migrant; taken at the college Sept. 11, 1889; "rare in Kalamazoo County" (Dr. M. Gibbs); Dr. M. Gibbs writes me that he has taken it in Kalamazoo and Ottawa Counties; "quite common fall migrant at Mackinac Island, have taken several in Kent County" (S. E. White); we find it not uncommon here this May, 1893; Forbes found (report Michigan State Horticultural Society, 1881, p. 204) that 35 per cent of food consisted of canker worms.

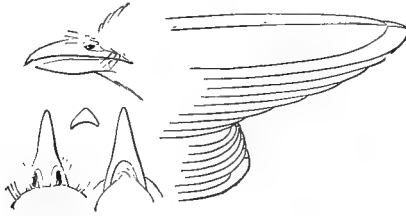


Warbling Greenlet.

266-627-(174, 175). *Vireo gilvus* (Vieill.). *WARBLING VIREO; WARBLING GREENLET.

Common throughout the state; April to Sept.; "common at Ann Arbor" (Dr. J. B. Steere); "common at Plymouth" (J. B. Purdy); "Hillsdale and Lenawee Counties and Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); breeds; has been known to steal material for nest building from King Birds' nests at Plymouth, Michigan (see O. and O., Vol. XIV, p. 93); nests and eggs as in *Vireo olivaceus*, except nests are slightly smaller, with softer lining, and the eggs less specked; "one of the very few birds that sing as it sits on its nest" (Dr. M. Gibbs); Forbes found (report of Michigan Horticultural Society, 1881, p. 204) that 35 per cent of food was canker worms; "nests

abundantly at Manchester, the nest hanging from the horizontal crotch of a limb" (L. Whitney Watkins). This sweet singer is a very valuable bird.



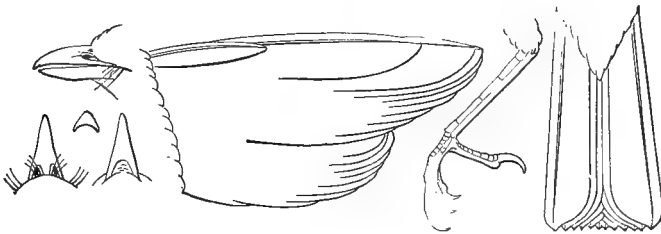
Yellow-throated Vireo, natural size.

267-628-(176). *Vireo flavifrons* (Vieill.). *YELLOW-THROATED VIREO.

Common; April to September; "common at Ann Arbor" (Dr. J. B. Steere); "rare in Wayne County" (B. W. Swales); "common in Hillsdale and Lenawee Counties" (A. H. Boies); "Mackinac Island" (S. E. White); breeds; nests in June, in trees; "nest from seven to thirty feet high, usually about twelve, and covered with lichens" (Dr. M. Gibbs); eggs rosy white, spotted with brown.

268-629-(177). *Vireo solitarius* (Wils.). *BLUE-HEADED VIREO OR GREENLET; SOLITARY GREENLET.

Rare; May and October; migrant; S. E. White finds this at Mackinac Island; E. E. Brewster has taken it at Iron Mountain; Dr. M. Gibbs writes me that it is a summer resident in Wexford County.



White-eyed Vireo, natural size.

269-631-(181). *Vireo noveboracensis* (Gmel.). *WHITE-EYED VIREO OR GREENLET.

"Scarce summer sojourner, breeds" (Dr. M. Gibbs on authority of Messrs. A. B. Covert and the late D. D. Hughes); "Keweenaw Point" (Kneeland); embraced in Cabot's Birds of Lake Superior.

FAMILY MNIOTILTIDÆ. WARBLERS, WOODLAND WARBLERS.

Small birds; often sweet singers; usually beautiful; mostly insectivorous; eggs almost always bluish white or cream colored specked with brown. Of many killed this spring—1893—the stomachs almost invariably contained both seeds and insects.

GENUS MNIOTILTA VIEILL.



Black and White Creeper, natural size.

270-636-(91, 92). Mniotilta varia (Linn.). BLACK AND WHITE WARBLER; BLACK AND WHITE CREEPER.

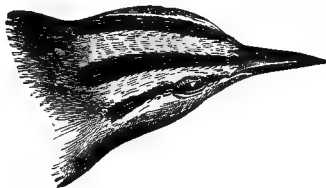
Throughout the lower Peninsula at least; common; rare in some localities; a pair taken at college by A. B. Cook, May 10, 1893; "Mackinac Island" (S. E. White); breeds; "not observed nesting at Ann Arbor" (Dr. J. B. Steere); "not common but breeds in Monroe County and always on the ground" (Jerome Trombley); "Dennis Nolan found a nest under a log in Kalamazoo County" (Dr. M. Gibbs); "never found a nest at Plymouth" (J. B. Purdy); "found one nest in Wayne County" (Dr. W. C. Brownell); nests in May, usually on the ground, under logs, very rarely in hollow trees; eggs four or five, white with yellowish tinge, and specked with brown, most of the brown is in the form of a wreath around the large end; eats insects and insects' eggs; very beneficial. This bird reminds us of the Creepers and Titmice, in its climbing along branches in quest of insects.

GENUS PROTONOTARIA BAIRD.

271-637-(95). Protonotaria citrea (Bodd.). * PROTHONOTARY WARBLER; GOLDEN SWAMP WARBLER; WILLOW WARBLER.

Rare at Lansing; "abundant the last few years in Southwestern Michigan" (Dr. M. Gibbs); "rare along Kalamazoo river in Allegan County" (S. E. White); "Lenawee County" (A. H. Boies); "has not been observed in Monroe County" (Jerome Trombley); breeds; found breeding in Michigan, latitude 42° north, by K. R. Willhelm; nests in June, in holes in trees, stumps etc.; "always nests near water, usually over it" (Dr. M. Gibbs); "at St. Joseph" (Butler's Birds of Indiana); "not rare in Cass County, found in swamps and thickets" (Prof. J. W. Simmons). For interesting account of its migration routes, see "Notes on the range of the Prothonotary Warbler in Indiana," by Amos W. Butler, O. and O., March, 1888, pp. 33-34; also "Proceedings Indiana Academy of Science, 1891, p. 165.

GENUS HELMITHERUS RAFIN.



Worm-eating Warbler, natural size.

272-639-(96). *Helminthophila vermivorus* (Gmel.). WORM-EATING WARBLER.

Rare; "Lenawee and Hillsdale Counties" (A. H. Boies); "Northern Indiana, song very like that of Chipping Sparrow" (A. W. Butler).

GENUS *HELMINTHOPHILA* RIDG.

273-641-(98). *Helminthophila pinus* (Linn.). BLUE-WINGED WARBLER, BLUE-WINGED YELLOW WARBLER.

Rare; "summer sojourner" (Gibbs' Birds of Michigan); "very rare in Monroe County, where it is transient, only two ever seen" (Jerome Trombley); "locally distributed" (Dr. M. Gibbs); breeds; nests in May on the ground; eggs four to five; "this and the preceding species are very rare in Northern Indiana" (A. W. Butler); S. E. White took two of these on Mackinac Island July 1, 1889. *Helminthophila leucobronchialis* (Brewst.), which has been reported from Michigan, (The Auk, Vol. I, pp. 359-363), is now regarded as a hybrid between this and the next species, as I learn from Prof. J. A. Allen. The same is doubtless true of the bird described as *Helminthophila gunnii* in the Grand Rapids Daily Democrat, June 1, 1879.

274-642-(102). *Helminthophila chrysoptera* (Linn.). *GOLDEN-WINGED WARBLER; BLUE GOLDEN-WINGED WARBLER.

Throughout the state; May to August; "common summer resident in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "have found nests with four eggs at Plymouth" (J. B. Purdy); breeds; nests in May, on the ground; eggs four to five, rarely six; one of our most beautiful warblers. Dr. M. Gibbs writes me that he has taken many nests in Kalamazoo County; Mr. Davie says that Mr. J. P. Norris has a set of four eggs from Monroe County, Mich., and a set of five from near Detroit (Nests and Eggs of North American Birds, p. 360).

275-645-(106 part). *Helminthophila ruficapilla* (Wils.). *NASHVILLE WARBLER.

Rather common; migrant; May; "very common migrant in Lake County, Indiana, and also a rare resident" (Dr. Brayton's Birds of Indiana, p. 105); "often common in Monroe County" (Jerome Trombley); "Mackinac Island, where it breeds" (S. E. White); "common at Iron Mountain" (E. E. Brewster); possibly breeds; nests in June, on the ground; eggs three to five; feeds on insects; beneficial.

276-646-(107). *Helminthophila celata* (Say). *ORANGE-CROWNED WARBLER.

Rare; May and September; migrant; this one is easily mistaken for the last mentioned species; "Plymouth" (J. B. Purdy); "common but migrant at Ann Arbor" (Dr. A. K. Fisher); reported several times by Dr. Atkins at Locke.

277-647-(109). *Helminthophila peregrina* (Wils.). *TENNESSEE WARBLER.

Not common; "rare in Monroe County" (Jerome Trombley); taken at Plymouth by J. B. Purdy; May and September and October; migrant; "breeds near L'Anse, Upper Peninsula" (Prof. Ludwig Kumlein); often mistaken for the Nashville Warbler. S. E. White finds this common in late September, and late October at Mackinac Island, where it is also a migrant.

GENUS COMPSOTHTLYPIS CAR.

278-648-(93). *Compsotthlypis americana* (Linn.). *PARULA WARBLER; BLUE YELLOW-BACKED WARBLER.

Rare; May and June; "Lenawee and Hillsdale Counties" (A. H. Boies); "Mackinac Island" (S. E. White); occasionally breeds; nests in June, in trees, "often in a bunch of lichens" (Dr. A. K. Fisher); nest elaborate; eggs four to five, white with yellowish tinge and specked with brown. "Never found a nest at Plymouth" (J. B. Purdy); "this bird is a transient in Monroe County, where it is becoming very rare" (Jerome Trombley).

GENUS DENDROICA GRAY.

279-650-(126). *Dendroica tigrina* (Gmel.). CAPE MAY WARBLER.

Not rare in spring and autumn; "common in Kent County in spring migrations, not rare in autumn; migrant; frequents the orchards and pines" (S. E. White); "see them every year in Kent County from May 7 to May 15, have killed fifteen in one day" (Dudley E. Waters); I have it reported from Thunder Bay Island; "Lenawee County" (A. H. Boies); "Monroe County, very rare, only two seen" (Jerome Trombley); "Mackinac Island" (S. E. White); in Cabot's list of Birds of Lake Superior; "known to breed near Green Bay, Wisconsin" (Prof. Ludwig Kumlein).

280-652-(111 part). *Dendroica æstiva* (Gmel.). *YELLOW WARBLER; YELLOW BIRD; SUMMER YELLOW BIRD.

Our most common resident warbler; April and May to August and September; taken at college by A. B. Cook, May 10, 1893, who finds it common; "not observed in Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); "taken at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in May, in thick foliage, in bushes or small trees, especially in willows along streams; nests exquisite; eggs four, occasionally five, yellowish white or greenish gray, specked with brown; J. B. Purdy reports a full set of albino eggs; Forbes found (see report of Michigan Horticultural Society, 1881, p. 204) that 66% of the food of several birds examined consisted of canker worms. "It feeds extensively on the larvæ of elm beetles" (Dr. A. K. Fisher). This is an excellent little bird friend.

281-654-(117). *Dendroica cerulescens* (Gmel.). *BLACK-THROATED BLUE WARBLER.

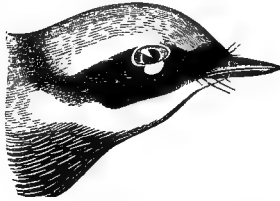
Common; migrant; two pairs taken at college by A. B. Cook May 10, 1893; "Mackinac Island" (S. E. White); possibly breeds north; "C. W. Gunn found it breeding in Ottawa County" (Dr. M. Gibbs); "migrant in Southern Michigan" (Jerome Trombley); "taken at Iron Mountain in spring" (E. E. Brewster); nests in low brushwood; eggs four to five, rosy white, and like those of most warblers specked with brown.



Yellow-rumped Warbler, natural size

282-655-(119). *Dendroica coronata* (Linn.). *MYRTLE WARBLER; YELLOW-RUMPED WARBLER; GOLDEN-CROWN WARBLER.

Very common; throughout the entire state; several taken in May, 1893, at college, by A. B. Cook; migrant in the southern part of the state; one nest found near Detroit by B. W. Swales (O. and O., Vol. XVI, 1891, p. 148); April or May and October; "our earliest migrant at Morrice" (Dr. W. C. Brownell); "our earliest warbler at Iron Mountain, taken April 16, 1890" (E. E. Brewster); breeds north; "nests at Mackinac Island in July and August" (S. E. White); "Keweenaw Point" (Kneeland); "nests in evergreens, eggs four" (J. W. Simmons).



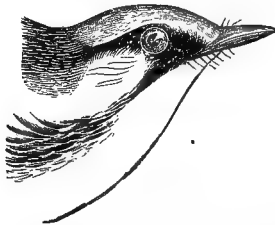
Black and Yellow Warbler, natural size.

283-657-(125). *Dendroica maculosa* (Gmel.). *MAGNOLIA WARBLER; BLACK AND YELLOW WARBLER.

Common; migrant; "quite common migrant in Monroe County" (Jerome Trombly); "common but shy in Lenawee County" (A. H. Boies); taken by E. E. Brewster at Iron Mountain; "Keweenaw Point" (Kneeland); May and June, and September and October; embraced in Cabot's Birds of Lake Superior; "abundant at Mackinac Island where it breeds" (S. E. White); "builds in Northern Michigan" (Davie's Nests and Eggs of North American Birds); a beautiful species.

284-658-(118). *Dendroica cerulea* (Wils.). *CERULEAN WARBLER; BLUE WARBLER.

Rather common; "Lenawee County" (A. H. Boies); "DeWitt" (Dr. G. W. Topping); "next to Yellow Warbler the most common warbler breeding in Monroe County" (Jerome Trombly); "have only taken one in Kent County" (S. E. White); May and June; very handsome; breeds; "several nests taken in Wayne County" (Dr. W. C. Brownell); nest taken near Detroit June 19, by W. A. Davidson (O. and O., Vol. XVII, 1892, p. 111); nests in May in high trees; this is quite common in the thickets about the college.



Chestnut-sided Warbler, natural size.

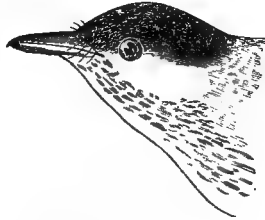
285-659-(124). *Dendroica pensylvanica* (Linn.). *CHESTNUT-SIDED WARBLER.

Very common, some seasons; throughout the entire State; "migrant at Plymouth" (A. B. Purdy); "Mackinac Island where it breeds" (S. E. White); "very common resident

at Iron Mountain " (E. E. Brewster); "more commonly found in swamps" (Prof. J. W. Simmons); several taken at college—the first May 10—by A. B. Cook in May, 1893. He finds it the most common Warbler; breeds; "nests found near Detroit by B. Swales" (O. and O., Vol. XVI, 1891, p. 148). Dr. M. Gibbs writes me that he once found five nests in one day in Kalamazoo County, where it rarely builds now; said to be two brooded in Canada; nests in June, in low bushes; eggs four or five. This species rears many Cow Birds.

286 660-(123). *Dendroica castanea* (Wils.). * BAY-BREASTED WARBLER.

Rather common; migrant in Southern Michigan; May and October; "Lenawee County and Northern Peninsula" (A. H. Boies); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); male taken at college May 20, 1893, by A. B. Cook; "breeds in Northern Michigan" (Davie's Nests and Eggs of North American Birds, p. 373). S. E. White writes me that he shot immature specimens at Mackinac Island as late as July; we have taken this species here more frequently in the spring; Dr. Atkins reports this species as very rare at Locke. Its song is very charming.



Black-poll Warbler, natural size.

287-661-(122). *Dendroica striata* (Forst.). * BLACK-POLL WARBLER.

Common; migrant; a pair taken by A. B. Cook at the college May 20, 1893; "Monroe County, some years very common" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Knéeland); "Iron Mountain May 24, 1881" (E. E. Brewster); "common spring migrant in Upper Peninsula" (Prof. Ludwig Kumlein).

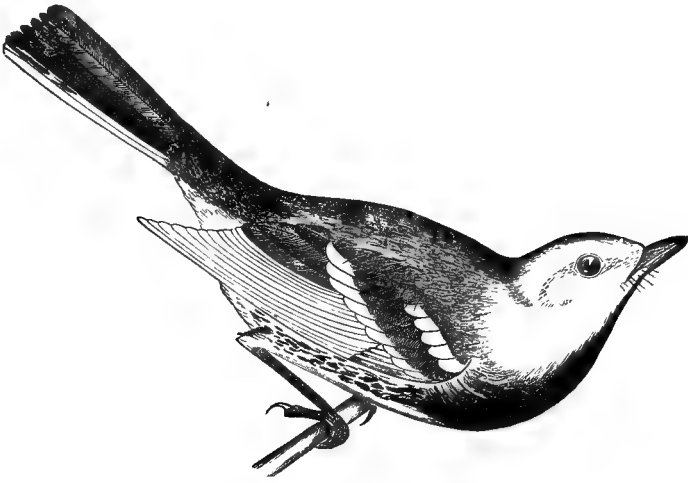
288-662-(121). *Dendroica blackburniæ* (Gmel.). * BLACKBURNIAN WARBLER; ORANGE-THROATED WARBLER; HEMLOCK WARBLER.

Rare; "rare migrant in Monroe County" (Jerome Trombley); rare in summer; throughout the Southern Peninsula; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Hillsdale and Lenawee Counties" (A. H. Boies); "DeWitt" (Dr. G. W. Topping); A. B. Cook took one male and two females of this handsome Warbler at the college May 18, the only ones seen up to this date, May 26, 1893; breeds north; "nests in Northern Peninsula" (Prof. Ludwig Kumlein); "has been found breeding in Southern Michigan where nests have been taken in pine trees, at an elevation of forty feet" (Davie's Nests and Eggs of North American Birds, p. 373); "B. F. Syke found two nests in Kalamazoo County, both quite high in tamarack trees" (Dr. M. Gibbs).

289-663a-(130). *Dendroica dominica albiflora* Baird. SYCAMORE WARBLER; WHITE-BROWED YELLOW-THROATED WARBLER.

Rare; "early migrant" (Dr. M. Gibbs); "rather rare summer resident, breeds, nests in tall sycamores on Raisin river" (Jerome Trombley); Dr. M. Gibbs writes me that he

has found one nest in Kalamazoo County; "said to be often common about Detroit" (Butler's Birds of Indiana).



Black-throated Green Warbler, natural size.

290-667-(112). *Dendroica virens* (Gmel.). *BLACK-THROATED GREEN WARBLER.

April and May, and August and September; usually a migrant south; nests north of Montcalm County; "breeds sparingly in Kent County but abundantly at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "taken in spring at Iron Mountain" (E. E. Brewster); "nests abundantly in Northern Peninsula" (Prof. Ludwig Kumlein); "breeds in Northern Michigan" (Davie's Nests and Eggs of North American Birds). This bird has been taken in Montcalm County by Dr. J. B. Steere, and in Ionia County by Mr. Levi Broas.

291-670-(131). *Dendroica kirtlandi* Baird. KIRTLAND'S WARBLER

"Rare straggler" (Dr. M. Gibbs); "one from Battle Creek May 11, 1883, identified by Robt. Ridgway; taken by Mr. Knapp at Ann Arbor May, 1888 (The Auk, Vol. VI, p. 279); one from Straits of Mackinaw, identified by Dr. C. Hart Merriam (The Auk, Vol. I, pp. 376 and 389); in 1879 nine specimens known, the fifth and ninth taken by A. B. Covert in Washtenaw County (H. A. Burdick in Bull. Nuttall Ornithological Club, Vol. IV, p. 185); reported by Dr. C. Hart Merriam from Straits of Mackinaw, May 21, 1885 (The Auk, Vol. I p. 376).

292-671-(134). *Dendroica vigosii* (Aud.). *PINE WARBLER; PINE-CREEPING WARBLER.

April and May and September and October; J. E. Nichols of Lansing has taken these often in October; not observed in Monroe County" (Jerome Trombley); "very common at Iron Mountain, and probably a summer resident" (E. E. Brewster); breeds north; "nests at Traverse City" (L. Whitney Watkins); "found all summer in Kent County, probably breeds" (S. E. White); "song resembles that of sparrow and is not warbler like" (Dr. M. Gibbs).

293-672-(132). *Dendroica palmarum* (Gmel.). *PALM WARBLER; YELLOW RED-POLLED WARBLER; WAG-TAILED WARBLER; TITLARK WARBLER.

Very common migrant; May and October; flocks; "occurs at Mackinac Island" (S. E. White); "E. E. Brewster has taken it at Iron Mountain; one of our most common and beautiful migrants.

294-673-(127). *Dendroica discolor* (Vieill.). PRAIRIE WARBLER.

"Rare migrant, breeds north of 44° north latitude" (Dr. M. Gibbs); "not observed in Monroe County" (Jerome Trombley); "breeds in Michigan" (Davie); Dr. M. Gibbs writes me that he has taken the eggs; found very common at Mackinac Island by S. E. White who has specimens taken there; Prof. J. A. Allen writes me that this bird does not go north of Central Michigan; Dr. M. Gibbs collected nest and two eggs May 26, 1879, in Ottawa County (Bul. Nutt. Orn. Club, Vol. IV, p. 186).

GENUS SEIURUS SWAINS.



Oven Bird, natural size.

295-674-(135). *Seiurus aurocapillus* (Linn.). *OVEN BIRD; GOLDEN-CROWNED THRUSH; WOOD WAGTAIL.

Very common; throughout the Southern Peninsula at least; April to September, rarely to October; "usually seen on the ground" (Prof. J. W. Simmons); "abundant at Ann Arbor" (Dr. J. B. Steere); "common in Lenawee and Hillsdale Counties" (A. H. Boies); "Mackinac Island" (S. E. White); taken at Iron Mountain by E. E. Brewster; breeds; nests in June on the ground, often under log; nest oven-like, hence common name of bird; nests common near marshes about the college; eggs four to six. This bird is retiring and usually found in dense thickets; "sings at all times of night" (Samuels). When we drive this bird from the nest it feigns lameness and flutters away to lure us from its eggs and young. This bird rears very numerous Cow Birds.

296-675-(136). *Seiurus noveboracensis* (Gmel.). *WATER THRUSH; SMALL-BILLED WATER THRUSH; WATER WAGTAIL.

Rare; migrant; April and May; "rare transient in Kalamazoo County" (Dr. M. Gibbs); "very rare in Kent County, one taken May 9, 1891" (S. E. White); "Keweenaw Point" (Kneeland); "taken in Hillsdale County" (A. H. Boies); "rare in Monroe County" (Jerome Trombley); frequents dense thickets in swamps; "breeds in Northern Indiana where it is a rare summer resident" (A. W. Butler); nests in June, among roots of turned up trees, in marshes or under stumps, logs, etc.; eggs four to six, delicate cream, densely specked with reddish brown.

297-676-(138). *Seiurus motacilla* (Vieill.). *LOUISIANA WATER THRUSH; LARGE-BILLED WAG TAIL WARBLER.

Not uncommon, especially in the southern part of the state; April to August; "common in Kalamazoo County" (Dr. M. Gibbs); "very common in Kent County" (S. E. White); breeds; nests on the ground, under logs, or as in the preceding species; eggs as in the preceding. Mr. Jerome Trombley writes me that this is the common "Water Thrush" of Monroe County.

GENUS GEOTHYLPIS CAB.



Kentucky Warbler, natural size.

298-677-(140). *Geothlypis formosa* (Wils.). *KENTUCKY WARBLER.

Exceedingly rare; Dr. Atkins reports taking one specimen June 24, 1878; Dr. M. Gibbs reports one specimen taken by him in Kalamazoo County.

299-678-(139). *Geothlypis agilis* (Wils.). *CONNECTICUT WARBLER.

Exceedingly rare, but becoming more common; "one of our rarest Warblers" (Dr. M. Gibbs); May and June; migrant; "first taken May, 1879, in Kalamazoo, Washtenaw, Ottawa and Ingham Counties within a week" (Dr. M. Gibbs); "one taken August 30, 1889, and the same date in 1890, and one taken a week later in Kent County" (S. E. White); Mr. Chas. W. Gunn reports one from Ingham and one from Ottawa County (Bull. Nuttall Ornithological Club, Vol. IV, p. 123); this is one of the latest Warblers to arrive in the spring.

300-679-(142). *Geothlypis philadelphia* (Wils.). *MOURNING WARBLER.

Occasionally quite common; May to August; "Hillsdale and Lenawee Counties" (A. H. Boies); "migrant at Plymouth" (J. B. Purdy); "rare in Monroe County" (Jerome Trombley); "rare in Kalamazoo County" (Dr. M. Gibbs); "Mackinac Island" (S. E. White); embraced in Cabot's Birds of Lake Superior; "Iron Mountain, May, 1888" (E. E. Brewster); "breeds north on edge of pinery" (Dr. M. Gibbs). Dr. Gibbs writes me that it is abundant in second growth clearings in the pine region north of 44 degrees north latitude; nest and eggs as in next species. Taken here by A. B. Cook, May 17, 1893.



Maryland Yellow-throat, male, natural size.

301-681-(141 part). *Geothlypis trichas* (Linn.). *MARYLAND YELLOW-THROAT;
YELLOW-THROATED GROUND WARBLER.

Very common; throughout the state; May to August; "abundant at Ann Arbor" (Dr. J. B. Steere); "common at DeWitt" (Dr. G. W. Topping); reported from Hillsdale and Lenawee Counties and at Sault Ste. Marie, July 16, 1892, by A. H. Boies, who thinks it breeds in the Northern Peninsula; "common at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; "two broods" (Dr. W. C. Brownell); nests from May to July, on the ground or in low thickets; nests often arched over; eggs four to six, clear white specked with reddish dots, though quite variable in size, form and markings; one of our finest singers and justly a favorite.

GENUS *ICTERIA* VIEILL.

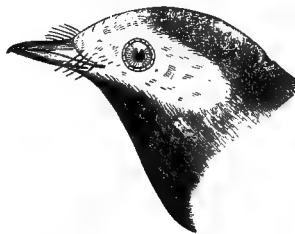


Yellow-breasted Chat.

302-683-(144). *Icteria virens* (Linn.). *YELLOW-BREASTED CHAT.

Exceedingly rare; "occasionally quite common" (Dr. H. A. Atkins); "not observed at Ann Arbor" (Dr. J. B. Steere); "once in Lenawee County" (A. H. Boies); "formerly nested in Monroe County, not seen since 1881" (Jerome Trombley); May to October; breeds; nests in May and June in bushes; eggs four; song varied and beautiful; "ventriloquist" (Butler's Birds of Indiana); "this is a southern species" (Prof. J. A. Allen).

GENUS *SYLVANIA* NUTT.



Hooded Warbler, natural size.

303-684-(146). *Sylvania mitrata* (Gmel.). *HOODED WARBLER; HOODED FLY-CATCHING WARBLER.

Quite common in southern part of State; generally a migrant; May and October; "breeds plentifully south of 42°, have taken many nests" (Dr. M. Gibbs); "common but transient in Monroe County" (Jerome Trombley); nests in May in low bushes; "eggs three, often only two" (Gibbs); an elegant bird.

304-685 (147). *Sylvania pusilla* (Wils.). WILSON'S WARBLER; GREEN BLACK-CAPPED YELLOW WARBLER.

"Tolerably common in Northern Indiana" (Butler's Birds of Indiana); "exceedingly abundant migrant at Mackinac Island and in spring in Kent County" (S. E. White); E. E. Brewster writes me that it is common at Iron Mountain; "often common migrant in Monroe County" (Jerome Trombley); "common migrant in Michigan" (Dr. M. Gibbs); I have never taken this bird about the college.



Canadian Flycatching Warbler, natural size.

305-686 (149). *Sylvania canadensis* (Linn.). * CANADIAN WARBLER; CANADIAN FLYCATCHING WARBLER.

Not rare; migrant; April and May and August and September; "rather common in Kalamazoo County" (Dr. M. Gibbs); Lenawee County" (A. H. Boies); common migrant in Monroe County" (Jerome Trombley); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common summer resident at Mackinac Island" (S. E. White); probably breeds in Northern Peninsula; nests in June on the ground; eggs four or five.

GENUS SETOPHAGA SWAINS.

306-687 (152). *Setophaga ruticilla* (Linn.). * AMERICAN REDSTART.

Very common; throughout the entire State; May to August; "Mackinac Island" (S. E. White); "rare at Iron Mountain" (E. E. Brewster); breeds; nests in June in small trees, usually twelve to twenty feet from the ground, rarely forty feet; "nests at Manchester, neatly woven in vertical crotch of shrubs about twelve feet high" (L. W. Watkins); nests usually found in thick woods or dense swamps; "breeds abundantly at Ann Arbor" (Dr. J. B. Steere). Dr. Atkins gives dates of its arrival for 26 years in O. and O., Vol. VIII, p. 31.

FAMILY MOTACILLIDÆ. WAGTAILS AND PIPITS.

Small birds; insectivorous; often in flocks.

GENUS ANTHUS BECHST.



Titlark, natural size.

307-697-(89). *Anthus pensilvanicus* (Lath.). * AMERICAN PIPIT; AMERICAN TIT-LARK; WAG-TAIL; BROWN LARK; PIPIT.

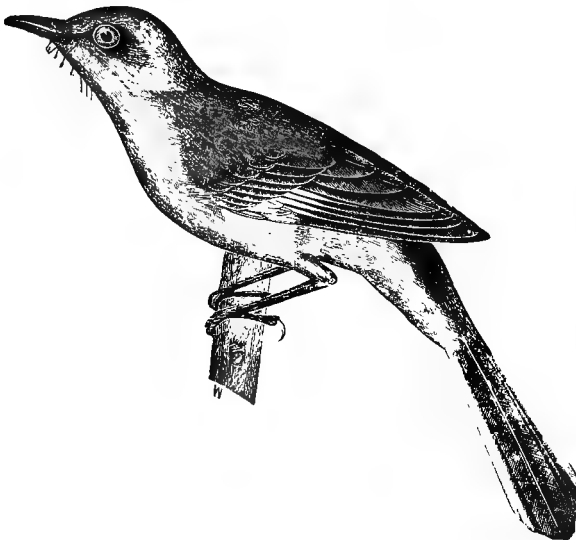
Common; throughout the state; in flocks; April and May, and Sept. to Nov., occasional in Dec. and Jan.; migrant; "common at Iron Mountain in autumn and probably in spring" (E. E. Brewster); "Keweenaw Point" (Kneeland); "winter sojourner" (A. H. Boies). Taken here by L. W. Watkins, May 10, 1893.

FAMILY TROGLODYTIDÆ. WRENS; THRASHERS, ETC.

Insectivorous birds; often sweet singers.

SUBFAMILY MIMINÆ. THRASHERS.

GENUS MIMUS BOIES.



Mocking Bird, about two-thirds natural size.

308-703-(15). *Mimus polyglottos* (Linn.). *MOCKING BIRD.

Possibly a rare accidental straggler from the south. One reported by E. L. Moseley. This species is included in the manuscript list of the Birds about Detroit, by the late Rev. Chs. Fox.

GENUS GALEOSOPTES CAB.

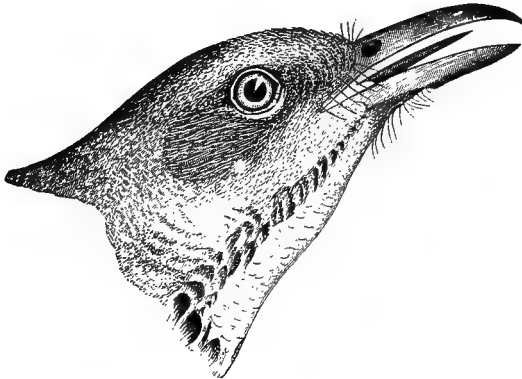


Cat-bird, natural size.

309-704-(16). *Galeoscoptes carolinensis* (Linn.). *CAT-BIRD.

Very common; throughout the state; usually in woodlands, though here at the college where we protect the birds, they even breed freely on the campus; April and May to Sept.; "Mackinac Island" (S. E. White); "rare at Iron Mountain" (E. E. Brewster); breeds; nests in shrubs; eggs four, rarely five, deep green; song pleasing and varied.

GENUS HARPORHYNCHUS CAB.



Brown Thrush, natural size.

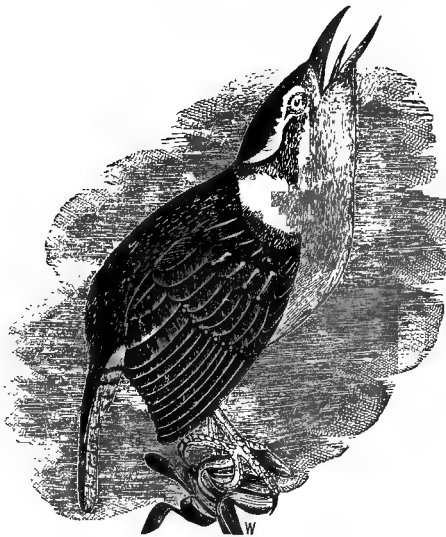
310-705-(17). *Harporhynchus rufus* (Linn.). *BROWN THRUSH; BIG BROWN WREN; BROWN THRASHER; BROWN MOCKING BIRD.

Very common, especially south; April to Sept.; "Grand Traverse County" (M. L. Leach); "April 28, 1891, at Grand Rapids" (E. B. Boies); "Mackinac Island" (S. E. White); "not seen in Upper Peninsula" (A. H. Boies); "very common at Iron Mountain, where with many other song birds they suffer seriously at the hands of the Italians, who kill them for stews" (E. E. Brewster); not shy; strong singers; "song wonderfully rich, melodious and varied" (L. S. Foster); breeds; nests in bushes, occa-

sionally on the ground; nest rude, coarse and bulky; eggs three to five, dirty white, specked with brown; food small fruits and insects; "Forbes found 23 per cent of food which he examined to be canker worms" (report State Horticultural Society, 1891, p. 204); like the Robin, this bird often returns to the same place year after year.

SUBFAMILY TROGLODYTINÆ. WRENS.

GENUS THRYOTHORUS VIEILL.



Carolina Wren.

311-718-(68). *Thryothorus ludovicianus* (Lach.). CAROLINA WREN.

Rare summer resident in southern part of the State; "Lenawee County" (A. H. Boies); Jerome Trombley finds it a rare summer resident in Monroe County, where he took a nest in 1892, beneath the roots of a fallen tree, with six eggs in it; "northern counties of Indiana" (Butler's Birds of Indiana). Said to breed at nearly all seasons. We have never seen it here. J. B. Purdy says it does not breed at Plymouth.

312-719-(71). *Thryothorus bewickii* (Aud.). BEWICK'S WREN.

"Very rare, in spring" (Dr. M. Gibbs); very rare; "summer resident in Monroe County, where it has nested three years in a bird box, identification certain" (Jerome Trombley); "rare, but several taken in Kalamazoo County" (Dr. M. Gibbs); we have never taken this here, and J. B. Purdy says the same of Plymouth.

GENUS TROGLODYTES VIEILL.

313-721-(74). *Troglodytes ædon* (Vieill.). HOUSE WREN.

Very common in some localities; April to October; "abundant at Grand Rapids" (E. B. Boies); "becoming rare at Plymouth" (J. B. Purdy); "not rare at Ann Arbor" (Dr. J. B. Steere); "not seen in Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in

trees, stumps, in niches under porches, boxes, etc., in June, occasionally second time in August; eggs four to ten, white, thickly specked with reddish brown. This bird is very rare at Lansing, especially since the advent of the English Sparrow, but "very common at Traverse City" (L. W. Watkins; "this bird leaves the vicinity of our dwellings after breeding" (L. S. Foster). This little Wren nested in my whirling horse-tether box, and repaired its nest time after time, as it would be destroyed by the turning of the box—there were six eggs.



Winter Wren, slightly reduced.

314-722-(76). *Troglodytes hiemalis* Vieill. *WINTER WREN.

Common migrant; "transient in Monroe County, seen oftener in spring than in fall" (Jerome Trombley); "migrant at Plymouth" (J. B. Purdy); "very common in spring, summer and fall, and occasionally in late winter, breeds" (Dr. M. Gibbs); reported by S. E. White at Grand Rapids, June 11, 1891; "rare at Ann Arbor" (Dr. J. B. Steere); it is very rare at Lansing; "Kent County, where it breeds, and Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); rather shy; "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); E. W. Durfee took a nest near Grand Rapids; "nesting habits much as in last species" (Davie's Nests and Eggs on North American Birds, p. 407); though it may nest in brush-piles, etc.; nest lined with feathers; eggs four to nine, white, minutely specked with brown; feeds on insects and insects' eggs; "song loud and hearty, scolds vigorously at intrusion" (E. L. Moseley).

GENUS *CISTOTHORUS* CAB.



Short-billed Marsh Wren, natural size.

315-724 (81). *Cistothorus stellaris* (Licht.). *SHORT-BILLED MARSH WREN.

Rather common; summer; "rare at Ann Arbor" (Dr. J. B. Steere); "Lenawee County" (A. H. Boies); "common in marshes at the west end of Lake Erie"

(Jerome Trombley); breeds; nests in July; nesting habits as in next species, except that it nests in clear places and in moist meadows, not over water (R. H. Wolcott); and the nest is formed of fresh reeds and flags and beautifully lined with cotton like down; E. W. Durfee finds nests not uncommon in Wayne County; eggs six to nine, white. Mr. E. W. Durfee states that these, like the next species, make two or three duplicate nests.



Long-billed Marsh Wren, natural size.

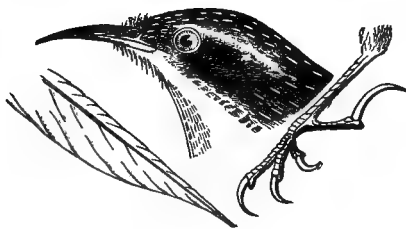
316-725-(79, 80). *Cistothorus palustris* (Wils.). *LONG-BILLED MARSH WREN.

Rather common in summer; "rare at Ann Arbor" (Dr. J. B. Steere); "St. Joseph County" (A. H. Boies); "abundant in the marshes at the west end of Lake Erie" (Jerome Trombley); "nests found in Wayne County" (E. F. Durfee); breeds; nests in colonies, near the ground, in marshes, in spherical nests of coarse grass, etc., "fastened to old flags two or three feet above the water or mud" (E. L. Moseley), the opening on the side; eggs five to ten, very small, dark chocolate brown, rarely almost white; "while the female is sitting the male partially builds one or more nests" (Dr. A. K. Fisher); Dr. W. C. Brownell writes me that there are sometimes eight of these duplicate and unlined nests.

FAMILY CERTHIIDÆ. CREEPERS.

Small, narrow-billed birds; seen creeping up tree trunk; food insects and insects' eggs.

GENUS CERTHIA LINN.



Head, foot and tail-feather of *Certhia*, natural size.

317-726-(62 part). *Certhia familiaris americana* (Bonap.). *BROWN CREEPER; AMERICAN CREEPER.

Rather common; throughout the entire state; all seasons; "does not breed at Plymouth" (J. B. Purdy); "rather rare at Ann Arbor" (Dr. J. B. Steere); "formerly nested

in Monroe County, now only a migrant, found a nest behind loose bark of a tree in 1865" (Jerome Trombley); "rather common in Kent County in summer and at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "common in November at Au Sable" (N. A. Eddy, O. and O., Vol. IX, p. 91); breeds; nests, between loosened bark and tree" (Dr. A. K. Fisher); "under bark of stub thirty feet high in Ottawa County" (Dr. M. Gibbs); see Davie's Nests and Eggs of North American Birds, p. 410; in May; eggs five to eight, white, specked with brown. This bird climbs spirally up tree trunks.

FAMILY PARIDÆ. NUTHATCHES AND TITS.

Food insects and insects' eggs; they creep up tree trunks and along limbs much as do the Sapsuckers and Creepers, except they usually go downwards head foremost as they hunt for their food. They are exceedingly valuable birds.

SUBFAMILY SITTINÆ. NUTHATCHES.

GENUS SITTA LINN.

318-727-(57). *Sitta carolinensis* Lath. * WHITE-BREASTED NUTHATCH; TOMTIT; WHITE-BELLIED NUTHATCH.

Common; throughout the entire state; every month of the year; "common at Ann Arbor" (Dr. J. B. Steere); "Au Sable" (N. A. Eddy); "never seen at Iron Mountain, Upper Peninsula" (E. E. Brewster); "Mackinac Island" (S. E. White); breeds; nests in April; nests usually made in ready formed holes in trees from ten to fifty feet from the ground; eggs four to eight, rarely nine or ten, white to roseate, specked with brown; this bird is often seen creeping down trees head foremost; will place acorns containing weevil grubs in some cavity in bark to hold them secure and then pick out the delicate tit-bit.



Red-bellied Nuthatch, natural size.

319-728-(59). *Sitta canadensis* Linn. * RED-BREASTED NUTHATCH; RED-BELLIED NUTHATCH; CANADA NUTHATCH.

Rather rare; more common north; "rare fall and spring migrant in Monroe County, none remaining to breed" (Jerome Trombley); "rare in Wayne County" (B. H. Swales); "common during migration" (E. L. Moseley); "rarely seen at Ann Arbor" (Dr. J. B. Steere); "does not breed at Plymouth" (J. B. Purdy); "very common at Iron Mountain in the Upper Peninsula" (E. E. Brewster); "Keweenaw Point" (Kneeland); "abundant at Mackinac Island, and occurs in winter in vast flocks, in Upper Peninsula, in Iron County" (S. E. White); "breeds" (Dr. M. Gibbs); nests and eggs as in the preceding species except that the eggs are slightly smaller; we find this more rare here than the preceding species.

SUBFAMILY PARINÆ. TITMICE.

GENUS PARUS LINN.



Tufted Titmouse, natural size.

320-731-(40). *Parus bicolor* (Linn.). *TUFTED TITMOUSE; SUGAR BIRD; BLACK-FRONTED TITMOUSE.

Common in more southern parts of the state; winter; occasional in April and May and Sept.; "is regular winter resident at Ann Arbor" (Dr. J. B. Steere); "common in Lenawee and Hillsdale Counties" (A. H. Boies); "every year in Monroe County often until late May" (Jerome Trombley); "Benjamin Syke found this abundantly in Van Buren County one year" (Dr. M. Gibbs); "only taken once at Plymouth" (J. B. Purdy); "rarely found north of 40 degrees" (H. Nehrling); "summer resident in northern counties of Indiana" (Butler); Dr. Atkins reports taking this in April and May at Locke; we have taken it at this place; two specimens taken by Stewart E. White in Kent County in June, 1891; these valuable birds eat a great many leaf rollers and other insects during the winter season; J. E. Nichols, of Lansing, has this bird in his collection taken in Sept., 1881; he has often taken it about Lansing in fall and spring.



Black-capped Chickadee. reduced.

321-735-(44). *Parus atricapillus* Linn. *CHICKADEE; BLACK-CAPPED CHICKADEE.

Very common; throughout the entire state; every month of the year; "very common at Ann Arbor" (Dr. J. B. Steere); "resident in Monroe County, but much more common in winter" (Jerome Trombley); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "very common at Iron Mountain" (E. E. Brewster) common at Bay City in the spring, 1884 (N. A. Eddy in O. and O., Vol. IX, p. 41); breeds; nests in a hole in a tree or stump; "breeds year after year in same nest, where they may roost in winter" (Dr. W. C. Brownell); "breeds at Traverse City" (L. W. Watkins); "have found full sets of eggs in April" (Dr. W. C. Brownell); eggs five or six, eight taken by Gilbert White in Kent County, May, 1892, ten young found in nest by F. M. Falconer, white specked with brown; "this bird is very familiar, may alight on a person" (E. L. Moseley, Forest and Stream, Sept., 1886); Dr. Atkins reported seeing them eat tent caterpillars extensively.

322 740-(49). *Parus hudsonicus* Forst. HUDSONIAN CHICKADEE.

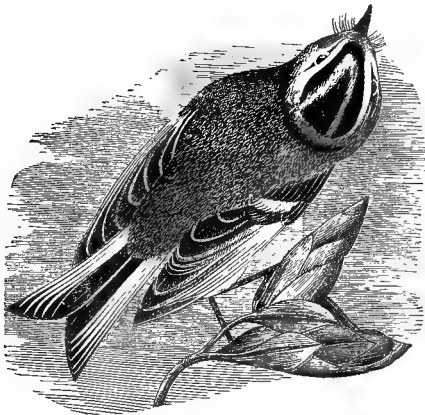
Rare; "Northern Michigan" (Dr. A. K. Fisher); "a rare winter resident of Northern Michigan" (H. Nehrling); "Keweenaw Point" (Kneeland); in Cabot's list of Birds of Upper Peninsula.

FAMILY SYLVIIDÆ. WARBLERS; KINGLETS; GNATCATCHERS.

Small, beautiful, insectivorous birds; feed largely on insects and insects' eggs.

SUBFAMILY REGULINÆ. KINGLETS.

GENUS REGULUS CUV.



Golden-crowned Kinglet.

323-748-(34). *Regulus satrapa* Licht. *GOLDEN-CROWNED KINGLET; GOLDEN-CROWNED WREN; GOLDEN-CRESTED KINGLET.

Common; migrant; Mar. to May and Oct. and Nov.; occasionally a winter resident; "more common at Ann Arbor than the next species" (Dr. J. B. Steere); "more timid

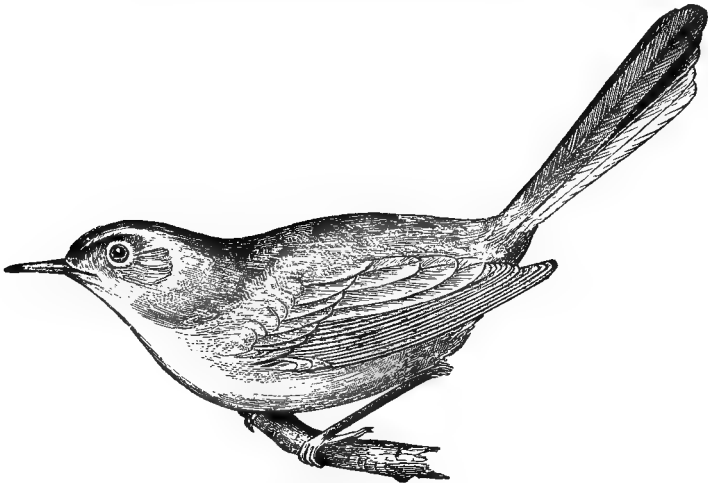
and retiring than the next species and comes and goes in flocks; probably does not breed in Southern Michigan" (A. H. Boies); "saw them at Plymouth, but they do not breed here" (J. B. Purdy); "Grand Rapids, April 14, 1891" (E. B. Boies); "common in winter in Wayne County" (B. H. Swales); "abundant migrant in Kent County" (S. E. White); found in woods; "common at Iron Mountain" (E. E. Brewster); included in Cabot's Birds of Lake Superior; found breeding at Ontonagon by Prof. Ludwig Kumlein; "breeds abundantly at Mackinac Island in July" (S. E. White); "eggs four to nine occasionally ten" (Prof. A. W. Butler); "nine" (E. E. Brewster); cream color, or creamy white, specked with brown.

324-749-(33). *Regulus calendula* (Linn.). *RUBY-CROWNED KINGLET.

Rather common; throughout the state; migrant; April and May, and Oct. and Nov.; "rare at Ann Arbor" (Dr. J. B. Steere); "Dewitt" (Dr. G. W. Topping); "common at Iron Mountain" (E. E. Brewster); breeds in the Northern Peninsula; "nests with five young at Mackinac Island, July 26, 1890" (S. E. White); "breeds at L'Anse" (Prof. Ludwig Kumlein); "nests semipensile in trees" (Coues' North American Birds); "eggs five to nine, dull whitish, or pale buff, faintly spotted with light brown, chiefly at the larger end" (Davie); "often found in flocks with the preceding species" (Prof. J. W. Simmons); this and the preceding species are two of our most elegant birds. This species is not shy.

SUBFAMILY POLIOPTILINÆ. GNATCATCHERS.

GENUS POLIOPTILA SCLAT.



Blue-gray Gnatcatcher, natural size.

325-751-(36). *Polioptila caerulea* (Linn.). *BLUE-GRAY GNATCATCHER.

Very common; throughout Southern Michigan; April to Sept.; "very common at Ann Arbor" (Dr. J. B. Steere); we find it common at this place; S. E. White reports it rare at Mackinac Island and says it is found in the Northern Peninsula; breeds; nests in trees in May; nest elegant, softly lined and covered outside with lichens; often secures material for nest from nests of other birds; eggs four to seven, white, specked with brown; habits much like those of Creepers and Nuthatches.

FAMILY TURDIDÆ. THRUSHES; BLUE BIRDS, ETC.

Food principally insects, often fruit; usually sweet singers.

SUBFAMILY TURDINÆ. THRUSHES.

GENUS TURDUS LINN.



Wood Thrush, natural size.

326-755-(6). *Turdus mustelinus* (Gmel.). *WOOD THRUSH; SONG THRUSH.

Not rare; throughout the state; April and May to October; numbers decreasing as the thickets are cleared up; "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds at least in Southern Peninsula; nests in May and June in trees or shrubs, "in orchards" (Dr. A. K. Fisher); I have found the nests more commonly in damp, thick woods, and generally on low beech limbs; "nests at Traverse City" (L. W. Watkins); eggs like those of the Robin, except a trifle smaller, two to five; "this bird is shy during molt" (Dr. A. K. Fisher); and is usually seen in dense woodlands and thickets; the food habits of the Wood Thrush are much the same as those of the Robin.

327-756-(7). *Turdus fuscescens* Steph. *WILSON'S THRUSH; VEERY; TAWNY THRUSH.

Common at least in southern part of the state; throughout the Lower Peninsula; April to Sept.; usually in swampy woods; "Keweenaw Point" (Kneeland); "occurs at Mackinac Island" (S. E. White); Mr. White informs me that it breeds in Kent County; breeds; "have seen them very abundant in Wayne County where they breed abundantly" (Dr. W. C. Brownell); nests on ground, occasionally in low shrubs or clumps of bushes, in May or June; eggs blue, four, occasionally five.

328-757-(12). *Turdus aliciae* Baird. *GRAY-CHEEKED THRUSH.

One reported from Michigan in the museum of the Kent Scientific Institute by E. L. Mosely; taken in Kent County by S. E. White; "one taken at Locke, May 10, 1883" (Dr. H. A. Atkins); "this bird is recorded from Kalamazoo County by F. H. Chapin and from Kent County by Mr. Chas. W. Gunn" (Dr. M. Gibbs).

329-758a-(13). *Turdus ustulatus swainsonii* (Cab.). *OLIVE-BACKED THRUSH;
L SWAINSON'S THRUSH; SWAMP ROBIN.

Common; throughout the Southern Peninsula if not the entire state; May to Oct.; E. B. Boies reports a large flock at Grand Rapids April 17 and 18, 1891; (Was not this the

Hermit Thrush?) "rare in Wayne County" (B. H. Swales); "Lenawee County" (A. H. Boies); "rare and transient in Monroe County" (Jerome Trombley); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds north; we have never found it nesting here; J. B. Purdy of Plymouth, has never seen or found a nest at that place; Dr. M. Gibbs reports taking nests and eggs in Kalamazoo County; (Is not this a mistake?) nests in low shrubs in June; nest compact with no mud; eggs four, bluish green, and peculiar in being specked with varying shades of brown; this bird is a sweet and almost continuous singer. Dr. M. Gibbs gives an excellent description of this bird and its nesting and migration in O. and O., Vol. X, 1885, p. 26.

330-759b-(10). *Turdus aonalaschkæ pallasii* (Cab.). *HERMIT THRUSH; CATHEDRAL BIRD; RUFUS-TAILED THRUSH; GROUND SWAMP ROBIN; SWAMP ANGEL.

April and May to Oct.; "Monroe County, common, transient" (Jerome Trombley); "occurs at Mackinac Island" (S. E. White); "Upper Peninsula" (H. Nehrling); "common at Iron Mountain" (E. E. Brewster); breeds north; nests taken in Montcalm County, by Dr. Gibbs, June 23, 1882; also "in Ottawa County, May 15, 1879, by W. A. Gunn" (Dr. M. Gibbs); nests in June, usually on the ground, "in July at Mackinac Island" (S. E. White), rarely in low shrubs; the nest loosely constructed and without mud; eggs three or four, light blue, immaculate. For interesting account of the habits of this bird, see article by Dr. M. Gibbs in O. and O., Vol. X, p. 27.

GENUS MERULA LEACH.



Robin, natural size.

331-761-(1). *Merula migratoria* (Linn.). *AMERICAN ROBIN; ROBIN.

Very common; throughout the entire state; "very common at Iron Mountain" (E. E. Brewster); March to October; rarely throughout the winter; "Grand Rapids Feb. 28, 1892" (E. B. Boies); retires in winter to protected localities and so is not so often seen; "Traverse City" (Dr. M. L. Leach); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); occasionally albinos; I knew an albino female, presumably the same bird, to nest two successive summers in the same nest; breeds; often two brooded; "always double brooded if undisturbed" (Dr. M. Gibbs); nests on fences, in trees, on ledges under eaves, in old nests, rarely of other birds, "in buildings" (O. and O., Vol. XIV, 1889, p. 43) etc.; eggs three to five, greenish blue, "rarely sprinkled with brown" (A. W. Butler); eats myriads of insects, mostly noxious species, angle worms and fruit, cherries, berries and grapes; 40 per cent of the food of birds examined by Prof. Forbes (report Michigan Horticultural Society, 1881, p. 204) was found to be canker worms.

GENUS SIALIA SWAINS.



Blue Bird, natural size.

332-766-(27). *Sialia sialis* (Linn.). * BLUE BIRD.

Common; throughout the entire state; less common than formerly; driven away by English Sparrows; Feb. or March to Nov.; "one of our earliest birds to arrive in the spring, Grand Rapids Feb. 26, 1891" (E. B. Boies); "Grand Traverse County" (M. L. Leach); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "very common at Iron Mountain" (E. E. Brewster); breeds; "double or triple brooded" (Prof. J. W. Simmons); nests in hollow trees, "either in holes which they excavate in rotten trees, or which other birds have excavated" (J. E. Nichols), in boxes, etc.; eggs four to six, light blue, rarely pure white; a very beautiful and valuable bird.

INDEX.

	Page.		Page.
Acadian Flycatcher.....	83	American Hawk Owl.....	71
Acadian Owl.....	69	American Herring Gull.....	28
Acanthis.....	93	American Long-eared Owl.....	68
hornemanni exilipes.....	5	American Magpie.....	85
linaria.....	98	American Night Heron.....	44
linaria rostrata.....	94	American Osprey.....	66
Accipiter.....	62	American Pipit.....	120
atricapillus.....	68	American Pochard Duck.....	35
cooperi.....	62	American Redstart.....	119
velox.....	62	American Robin.....	130
Accipitrinæ.....	61	American Rough-legged Hawk.....	64
Actitis.....	53	American Scaup Duck.....	36
macularia.....	53	American Scoter.....	38
Æchmophorus.....	24	American Snipe.....	49
occidentalis.....	24	American Sparrow Hawk.....	66
Ægialitis.....	55	American Swan.....	40
meloda.....	55	American Three-toed Woodpecker.....	75
meloda circumcincta.....	56	American Titlark.....	120
semipalmata.....	55	American White-fronted Goose.....	39
vócifera.....	55	American White Pelican.....	31
Agelaius.....	88	American Widgeon.....	33
phœniceus.....	88	American Woodcock.....	48
Aix.....	35	Ammodramus.....	96
sponsa.....	35	caudacutus nelsoni.....	97
Alaudidæ.....	84	henslowii.....	97
Alca.....	26	lecontei.....	5, 97
torda.....	26	sandwichensis savanna.....	96
Alcedinidæ.....	73	savannarum passerinus.....	97
Alcidæ.....	26	Ampelidæ.....	105
Alcyones.....	73	Ampelinae.....	105
American Avocet.....	48	Ampelis.....	105
American Barn Owl.....	67	cedrorum.....	106
American Bittern.....	41	garrulus.....	105
American Black Scoter.....	38	Alcidæ.....	26
American Coot.....	46	Alle.....	27
American Creeper.....	124	An act for the Protection of Birds.....	6
American Crossbill.....	93	Anas.....	32
American Dunlin.....	50	americana.....	33
American Eider Duck.....	38	boschas.....	32
American Golden-eye.....	36	carolinensis.....	33
American Golden Plover.....	55	discors.....	33
American Goldfinch.....	94	obscura.....	33
American Goshawk.....	63	strepera.....	33
American Green Sandpiper.....	52	Anatidæ.....	31

	Page.		Page.
Anatineæ	32	Bewick's Wren	122
Ancient Murrelet	26	Bibliography	12
Anhinga Anhinga	5	Bird, Blue	131
Anser	39	Butcher	107
albifrons gambeli	39	Cat	121
Anseres	31	Cedar	106
Anserinæ	38	Cherry	108
Anthus	120	Fire	89
pensilvanicus	120	Indigo	101
Antrostomus	77	Lettuce	94
vociferus	78	Snow	94, 99
Aphrizidæ	56	Summer Red	102
Aquila	65	Thistle	94
chrysaëtos	65	Yellow	94
Archibuteo	64	Birds, an act for the protection of	6
lagopus sancti-johannis	64	Birds of prey	60
Arctic Tern	29	Bittern	41
Arctic Three-toed Woodpecker	75	American	41
Ardea	42	Least	42
candidissima	43	Bitterns	41
cœrulea	5	Black and White Creeper	110
egretta	43	Black and White Warbler	110
herodias	43	Black and Yellow Warbler	113
tricolor ruficollis	43	Black-backed Three-toed Woodpecker	75
virescens	43	Black-bellied Plover	54
Ardeidæ	41	Black-bellied Sandpiper	50
Ardeinæ	42	Black-billed Cuckoo	73
Arenaria	56	Blackbird	87
interpres	56	Bronzed Crow	90
Arenarinæ	56	Common	90
Asio	67	Crow	90
accipitrinus	68	Red-shouldered	88
wilsonianus	68	Red-winged	88
Auks	25-26	Rusty	90
Authorities, list of	4	Skunk	87
Avocet	48	Swamp	88
American	48	Yellow-headed	88
Avocets	48	Blackbirds	87
Aythya	35	Blackburnian Warbler	114
affinis	36	Black-capped Chickadee	127
americana	35	Black Guillemot	26
collaris	36	Black-headed Gull	28
marila nearctica	36	Black Jack	38
vallisneria	36	Black-necked Stilt	48
Baird's Sandpiper	50	Blackpoll Warbler	114
Bald Eagle	65	Black-shouldered Kite	61
Baldpate	33	Black Tern	30
Baltimore Oriole	89	Black-throated Blue Warbler	112
Banded-backed Three-toed Woodpecker	75	Black-throated Bunting	101
Bank Swallow	104	Black-throated Diver	26
Barn Owl	67	Black-throated Green Warbler	115
Barn Swallow	103	Black-throated Loon	26
Barred Owl	68	Black-throated Murrelet	26
Barrel Maker	41	Black-winged Redbird	102
Barrow's Golden Eye	37	Black Woodpecker	76
Bartramia	52	Blue-backed Swallow	104
longicauda	52	Bluebird	131
Bartramian Sandpiper	52	Blue Golden-winged Warbler	111
Bartramian Tattler	52	Blue Goose	39
Bay-breasted Warbler	114	Blue-gray Gnatcatcher	128
Bay-winged Bunting	95	Blue-headed Greenlet	109
Bee Martin	81	Blue-headed Vireo	109
Belted Kingfisher	74	Blue Jay	85
Belted Piping Plover	56	Blue Linnet	101
		Blue Warbler	113

	Page.		Page.
Blue-winged Teal	38	Calcariscus, pictus	95
Blue-winged Warbler	111	Calidris	51
Blue-winged Yellow Warbler	111	arenaria	51
Blue Yellow-backed Warbler	112	Camptolaimus	5
Bob Lincoln	87	labradorius	5
Bobolink	87	Canada Goose	40
Bob White	57	Canada Grouse	57
Bohemian Waxwing	105	Canada Jay	86
Bonaparte's Gull	28	Canada Nuthatch	125
Bonaparte's Sandpiper	50	Canadian Flycatching Warbler	119
Bonasa	58	Canadian Warbler	119
umbellus	58	Canvas-back Duck	36
Books	10	Cape May Warbler	112
Botaurinae	41	Caprimulgi	77
Botaurus	41	Caprimulgidae	77
exilis	42	Cardinal	100
lentiginosus	41	Cardinal Grosbeak	100
Brant	40	cardinalis	100
Branta	39	cardinalis	100
bernicla	40	Carolina Grebe	25
canadensis	40	Carolina Paroquet	72
canadensis hutchinsii	40	Carolina Wren	122
canadensis minima	40	Carpodacus	92
canadensis occidentalis	40	purpureus	92
Bridge Bird	82	Caspean Tern	29
Broad-winged Hawk	64	Cat Bird	121
Bronzed Crow Blackbird	90	Cathartes	60
Bronzed Grackle	90	aura	60
Brotherly-love Greenlet	108	Cathartidae	60
Brotherly-love Vireo	108	Cathedral Bird	130
Brown Creeper	124	Cayenne Tern	29
Brown Lark	120	Cedarbird	106
Brown Thrasher	121	Ceophloeus	76
Brown Thrush	121	pileatus	76
Bubo	70	Cephus	26
virginianus	70	grylle	26
virginianus subarcticus	71	Certhia	124
Bubonidae	67	familiaris americana	124
Buff-breasted Sandpiper	58	Certhiidae	124
Buffle-head	37	Cerulean Warbler	113
Bull Bat	78	Ceryle	73
Bunting	88, 95	alcyon	74
Bay-winged	95	Chætura	79
Black-throated	101	pelagica	79
Cow	88	Chæturinae	79
Henslow's	97	Charadriidae	54
Indigo	101	Charadrius	54
Snow	94	dominicus	55
Towhee	100	squatarola	54
Varied	101	Charitonetta	37
Butcher Bird	107	albeola	37
Buteo	63	Chat	118
borealis	63	Yellow-breasted	118
latissimus	64	Chelidon	103
lineatus	64	erythrogaster	103
swainsoni	64	Chen	38
Butter-ball	37	caerulescens	39
Butter-bird	37	hyperborea	38
Buzzard	60, 63	hyperborea, nivalis	39
Red-shouldered	64	Cherry Bird	106
Red-tailed	63	Chestnut-sided Warbler	113
Turkey	60	Chewink	100
Cackling Goose	40	Chickadee	127
Calcariscus	95	Black-capped	127
lapponicus	95	Hudsonian	127
		Chicken Hawk	62

	Page.		Page.
Chimney Swallow.....	79	Crane, Whooping	44
Chimney Swift.....	79	Cranes	44
Chippie.....	98	Creepers	110
Chipping Sparrow.....	98	American	124
Chondestes.....	97	Black and White.....	110
grammacus.....	97	Brown.....	124
Chordeiles.....	78	Creepers	124
virginianus.....	78	Crested Flycatcher.....	82
Circus	62	Cricket Sparrow.....	97
hudsonius.....	62	Crossbill	93
Cistothorus.....	123	American	93
palustris	124	Red	93
stellaris	123	White-winged.....	93
Clamatores.....	81	Crow.....	86
Clangula	37	American	86
hyemalis	37	Crow Blackbird.....	90
Clay-colored sparrow.....	98	Crows	86
Cliff Swallow.....	108	Common	86
Clivicola	104	Crymophilus.....	47
riparia.....	104	fulicarius.....	47
Coccythraustes.....	90	Cuckoo.....	72
vespertina	91	Black-billed.....	73
Coccyges.....	72	Yellow-billed.....	73
Coccygine.....	72	Cuckoos.....	72
Coccyzus	72	American.....	72
americanus.....	73	Cuculi.....	72
erythrophthalmus.....	73	Cuculidæ.....	72
Colaptes	77	Curlew.....	53
auratus.....	77	Eskimo.....	54
Colinus	56	Hudsonian.....	53
virginianus	57	Jack.....	53
Columbæ.....	59	Long-billed.....	53
Columbidæ.....	59	Short-billed.....	53
Colymbus	24	Sickle-billed.....	53
auritus.....	24	Curlew Sandpiper.....	50
holboellii.....	24	Cyanocitta.....	85
Comptosylpis.....	112	cristata.....	85
americana.....	112	Cygninæ.....	40
Connecticut Warbler.....	117	Cypæli.....	79
Contopus	82		
borealis	82	Dabchick.....	25
virens.....	83	Dafila	34
Conurus.....	72	acuta.....	35
carolinensis.....	72	Dauber.....	103
Cooper's Hawk.....	62	Mud.....	108
Coot.....	46	Dendragapus.....	57
American.....	46	canadensis.....	57
Sea.....	38	franklinii.....	5
Coots.....	45	Dendroica.....	112
Cormorant.....	31	æstiva.....	112
Double-crested.....	31	blackburniæ.....	114
Cormorants.....	30	cærulea.....	113
Corvidæ.....	85	cærulescens.....	112
Corvinæ.....	86	castanea.....	114
Corvus	86	coronata.....	113
americanus.....	86	discolor.....	116
corax sinuatus.....	86	dominica.....	5
Cow Bird.....	88	dominica albilora.....	114
Cow Bunting.....	88	kirtlandi.....	115
Crake.....	45	maculosa.....	113
Yellow.....	46	palmarum.....	116
Crane.....	44	pensylvanica.....	113
Little Brown.....	44	striata.....	114
Sandhill.....	44	tigrina.....	112
White.....	44	vigorosii.....	115
		virens.....	115

	Page.		Page.
Dickcissel.....	101	Duck, Spirit.....	37
Didapper.....	25	Spoonbill.....	34
Dipper.....	25	Surf Scoter.....	38
Diver.....	25	Tree.....	35
Black-throated.....	26	Velvet Scoter.....	38
Great Northern.....	25	Whistler.....	36
Hall.....	25	White-winged Scoter.....	38
Red-throated.....	26	Widgeon.....	33
Diving Birds.....	24	Wood.....	35
Doe Bird.....	51	Duck Hawk.....	68
Lesser.....	51	Ducks.....	31
Dolichonyx.....	87	Dunlin.....	50
oryzivorus.....	87	American.....	50
Double-crested Cormorant.....	31	Eagle.....	65
Dough Bird.....	51	Bald.....	65
Dove.....	60	Golden.....	65
Carolina.....	60	Eave Swallow.....	103
Morning.....	60	Ectopistes.....	59
Dowitcher.....	49	migratorius.....	59
Long-billed.....	49	Egret.....	43
Downey Woodpecker.....	74	American.....	43
Dryobates.....	74	Little White.....	43
pubescens.....	74	Louisiana.....	43
villosus.....	74	Egrets.....	41
Duck.....	31	Eider.....	38
American Eider.....	38	American.....	38
American Golden-eye.....	36	King.....	38
American Scaup.....	36	Elanoides.....	61
American Scoter.....	38	forficatus.....	61
American Widgeon.....	38	Elanus.....	61
Baldpate.....	33	leucurus.....	61
Barrow's Golden-eye.....	37	Empidonax.....	83
Black.....	33	acadicus.....	83
Black Jack.....	33	flaviventris.....	83
Blue-winged Teal.....	33	minimus.....	83
Buffle-head.....	37	pusillus trailli.....	83
Butter-ball.....	37	English Sparrow.....	96
Canvas-back.....	36	Law for destruction of.....	8
Dusky.....	33	Ereunetes.....	50
Eider (American).....	38	pusillus.....	50
Eider (King).....	38	Erismatura.....	38
Fish.....	31	rubida.....	38
Gadwall.....	33	Eskimo Curlew.....	54
Garrot.....	36	European Sparrow.....	96
Golden-eye.....	36	Evening Grosbeak.....	91
Greater Blackhead.....	36	Falco.....	65
Greater Blue-bill.....	36	columbarius.....	66
Greater Scaup.....	36	peregrinus anatum.....	66
Green-head.....	32	rusticolus gyrfalco.....	65
Green-winged Teal.....	33	sparverius.....	66
Harlequin.....	38	Falcon.....	66
King Eider.....	38	Peregrine.....	66
Lesser Black-head.....	36	Falcones.....	61
Lesser Blue-billed.....	36	Falconidæ.....	61
Lesser Scaup.....	36	Falconinæ.....	65
Long-tailed.....	37	Falcons.....	61
Mallard.....	32	Field Plover.....	52
Old Squaw.....	37	Field Sparrow.....	98
Old Wife.....	37	Field Swallow.....	104
Pintail.....	35	Finch.....	92
Redhead.....	35	Grass.....	95
Ring-neck.....	36	Indigo Painted.....	101
Ruddy.....	38	Lark.....	97
Sea Coot.....	38	Nelson's Sharp-tailed.....	97
Shoveller.....	34		

	Page.		Page.
Finch, Pine.....	94	Gnatcatchers.....	128
Purple.....	92	Goat Sucker.....	78
Finches.....	90	Goat Suckers.....	77
Fire Bird.....	89	Godwit.....	51
Fish Duck.....	81	Great Marbled.....	51
Fish Hawk.....	66	Hudsonian.....	51
Flicker.....	77	Marble.....	51
Florida Gallinule.....	46	Golden Crowned Kinglet.....	127
Flycatcher.....	81	Golden-crowned Thrush.....	116
Acadian.....	83	Golden-crowned Warbler.....	113
Crested.....	82	Golden Eagle.....	65
Great Crested.....	82	Golden-eye.....	36
Least.....	83	American.....	36
Olive-sided.....	82	Barrow's.....	37
Pewit.....	82	Golden Swamp Warbler.....	110
Small Green-crested.....	53	Golden-winged Warbler.....	111
Traill's.....	83	Golden-winged Woodpecker.....	77
Tyrant.....	81	Goldfinch.....	94
Yellow-bellied.....	88	American.....	94
Flycatchers.....	81	Goose.....	38
Tyrant.....	81	American White-fronted.....	39
Fly up the Creek.....	43	Blue.....	39
Foster's Tern.....	29	Brant.....	40
Fox Sparrow.....	100	Cackling.....	40
Franklin's Gull.....	28	Canada.....	40
Fratercula.....	26	Common Wild.....	40
arctica.....	26	Greater Snow.....	39
Freshwater Marsh Hen.....	45	Hutchin's.....	40
Fringilladæ.....	90	Lesser Snow.....	38
Fulica.....	46	White-cheeked.....	40
americana.....	46	Goosander.....	31
Fulicinæ.....	46	Grackle.....	90
Gadwall.....	33	Bronzed.....	90
Galeoscoptes.....	121	Rusty.....	90
carolinensis.....	121	Grass Finch.....	95
Gallinaceous Birds.....	58	Grasshopper Sparrow.....	97
Gallinæ.....	56	Grass Snipe.....	50
Gallinago.....	49	Grayback.....	49
delicata.....	49	Gray-backed Snipe.....	49
Gallinula.....	46	Gray-cheeked Thrush.....	129
galeata.....	46	Gray Phalarope.....	47
Gallinule.....	46	Gray Snipe.....	49
Florida.....	46	Great Black-backed Gull.....	27
Gallinules.....	45-46	Great Blue Heron.....	43
Gallinulinæ.....	46	Great Crested Flycatcher.....	82
Game Warden.....	8	Great Gray Owl.....	68
law regarding.....	8	Great Horned Owl.....	70
Garrot.....	36	Great Northern Diver.....	25
Garrulinæ.....	85	Great White Egret.....	43
Geese.....	31	Great White Heron.....	43
Gelochelidon.....	29	Greater Blue-bill duck.....	36
nilotica.....	29	Greater Redpoll.....	94
Geothlypis.....	117	Greater Scaup Duck.....	36
agilis.....	117	Greater Snow Goose.....	39
formosa.....	117	Greater Tattler.....	51
philadelphia.....	117	Greater Teltale.....	51
trichas.....	118	Greater Yellow-legs.....	51
Glancionetta.....	36	Grebe.....	24
clangula americana.....	36	Carolina.....	25
islandica.....	37	Holboell's.....	24
Glancus Gull.....	27	Horned.....	24
Glossy Ibis.....	41	Pie-billed.....	25
Gnatcatcher.....	128	Red-necked.....	24
Blue-gray.....	128	Western.....	24
		Grebes.....	24

	Page.		Page.
Greenback.....	55	Hawk, Cooper's.....	62
Green Black-capped Yellow Warbler.....	119	Duck.....	66
Green-head.....	32	Fish.....	66
Green Heron.....	43	Hen.....	63, 64
Greenlet.....	107	Marsh.....	62
Blue-headed.....	109	Mouse.....	62
Brotherly-love.....	108	Night.....	73
Red-eyed.....	103	Pigeon.....	66
Solitary.....	109	Red-shouldered.....	64
Warbling.....	108	Red-tailed.....	63
White-eyed.....	109	Rough-legged.....	64
Green-winged Teal.....	33	Sharp-shinned.....	62
Grosbeak.....	91	Sparrow.....	66
Cardinal.....	100	Swainson's.....	64
Evening.....	91	Hawks.....	61
Pine.....	91	Hell Divers.....	24, 25
Rose-breasted.....	101	Helmintharus.....	110
Ground Bird.....	95	vermivorus.....	111
Ground Robin.....	100	Helminthophila.....	111
Grouse.....	56	celata.....	111
Canada.....	57	chrysoptera.....	111
Pinnated.....	58	peregrina.....	111
Ruffed.....	58	pinus.....	111
Grus.....	44	ruficapilla.....	111
americanus.....	44	Hemlock Warbler.....	114
canadensis.....	44	Hen.....	45, 58
mexicana.....	44	Marsh.....	45
Grues.....	44	Prairie.....	58
Gruidae.....	44	Hen Hawk.....	63, 64
Gull.....	27	Henslow's Bunting.....	97
American Herring.....	28	Henslow's Sparrow.....	97
Black-headed.....	28	Herodii.....	41
Bonaparte's.....	28	Herodiones.....	41
Franklin's.....	28	Heron.....	43
Glaucus.....	27	American Night.....	44
Great Black-backed.....	27	Black-crowned Night.....	44
Herring.....	28	Great Blue.....	43
Iceland.....	27	Great White.....	43
Kittiwake.....	27	Green.....	43
Laughing.....	28	Louisiana.....	43
Ring-billed.....	28	Snowy.....	43
Sabine's.....	29	Heron's.....	41
Smithsonian.....	28	High Holder.....	77
White-winged.....	27	Himantopus.....	48
Gull-billed Tern.....	29	mexicanus.....	48
Gulls.....	27	Hirundinidae.....	102
Gyr Falcon.....	65	Histrionicus.....	38
Habia.....	101	histrionicus.....	33
ludoviciana.....	101	Holboell's Grebe.....	24
Hæmatopus palliatus.....	5	Hooded Flycatching Warbler.....	118
Hair Bird.....	98	Hooded Warbler.....	118
Hairy Woodpecker.....	74	Hoot Owl.....	63, 70
Haliæetus.....	65	Horned Grebe.....	24
leucocephalus.....	65	Horned Lark.....	84
Hang Nest.....	89	House Pewee.....	82
Harlequin Duck.....	38	House Wren.....	122
Harporhynchus.....	121	Hudsonian Chickadee.....	127
rufus.....	121	Hudsonian Curlew.....	53
Harrier.....	62	Hudsonian Godwit.....	51
Hawk.....	62	Humming Bird.....	80
American Goshawk.....	63	Ruby-throated.....	80
American Rough-legged.....	64	Humming Birds.....	79
American Sparrow.....	66	Hydrochelidon.....	30
Broad-winged.....	64	nigra surinamensis.....	30
Chicken.....	62	Ibidide.....	41

	Page.		Page.
Ibis	41	Lamellirostral Swimmers	31
Glossy	41	Laniidæ	107
Ibises	41	Lanius	107
Ice Gull	27	borealis	107
Iceland Gull	27	ludovicianus	107
Icteria	118	ludovicianus excubitoroides	107
virens	118	Lapland Longspur	95
Icteridæ	87	Large-billed wag-tail warbler	117
Icterus	89	Laridæ	27
galbula	89	Larinæ	27
spurius	89	Lark	84
Ictinia	61	Brown	420
mississippiensis	61	Horned	84
Indian Hen	41	Little Meadow	101
Indigo Bird	101	Meadow	89
Indigo Bunting	101	Prairie Horned	84
Indigo Painted Finch	101	Shore	84
Introduction	3	Western Meadow	89
Jacana	5	Lark Finch	97
spinosa	5	Lark Sparrow	97
Jack Curlew	58	Larks	84
Jack Snipe	49-50	Larus	27
Jæger	27	argentatus smithsonianus	28
Jægers	27	atricilla	28
Jay	85	delawarensis	28
Blue	85	franklinii	28
Canada	86	glaucus	27
Jays	85	leucopterus	27
Jerfalcon	65	marinus	27
Jewee	100	philadelphia	28
Joe-wink	100	Laughing Gull	28
Journals	10	Least Flycatcher	88
Junco	99	Least Sandpiper	50
hyemalis	99	Least Tern	30
hyemalis oregonus	99	Lesser Doe Bird	51
hyemalis shufeldti	99	Lesser Redpoll	93
Oregon	99	Lesser Scaup Duck	36
Slate-colored	99	Lesser Tattler	52
Kentucky Warbler	117	Limnicolæ	47
Kildeer	55	Limosa	51
Kildeer Plover	55	fedoa	51
King Bird	81	hamastica	51
King Eider	38	Lincoln's Sparrow	99
Kingfisher	74	Linnet	94
Belted	74	Pine	94
Kingfishers	73	Redpoll	94
Kinglet	127	Literature of Birds	10
Golden-crowned	127	Little Brown Crane	44
Ruby-crowned	128	Little White Egret	43
Kinglets	127	Log Cock	76
King Rail	45	Long-billed Curlew	53
Kirtland's Warbler	115	Long-billed Dowitcher	49
Kite	61	Long-billed Marsh Wren	124
Black-shouldered	61	Long-eared Owl	68
Mississippi	61	Longipennes	27
Swallow-tailed	61	Longspur	95
White-tailed	61	Lapland	95
Kites	61	Painted	95
Kittiwake	27	Smith's	95
Knot	49	Long-tailed Duck	37
Lagopus	58	Long-winged Swimmers	27
lagopus	58	Loon	25
		Black-throated	26
		Red-throated	26
		Loons	25

	Page.		Page.
Lophodytes	32	Mniotilta	110
cucullatus	32	varia	110
Louisiana Egret	43	Mniotiltidae	109
Louisiana Heron	43	Mocking Bird	121
Louisiana Water Thrush	117	Brown	121
Loxia	92	Molothrus	87
curvirostra minor	93	ater	88
lencoptera	93	Motacillidae	120
Macaws	72	Mottled Owl	69
Macrochires	77	Mourning Dove	60
Macrorhamphus	49	Mourning Warbler	117
scelopaceus	49	Mouse Hawk	62
Magnolia Warbler	118	Mud-dauber	103
Magpie	85	Mud Hen	46
American	85	Murre	26
Magpies	85	Myiarchus	82
Mallard	32	crinitus	82
Marbled Godwit	51	Myrtle Warbler	113
Marsh Hawk	62	Nashville Warbler	111
Marsh Hen	45	Nelson's Sharp-tailed Finch	97
Fresh Water	45	Nelson's Sparrow	97
Marsh Robin	100	Night Hawk	78
Marsh Tern	29	Night Heron	44
Martin	102	Night Raven	44
Bee	81	Northern Phalarope	47
Purple	102	Northern Shrike	107
Sand	104	Numenius	53
Maryland Yellow-throat	118	borealis	54
Meadow Lark	39	hudsonicus	53
Little	101	longirostris	53
Meadow Starling	89	Nuthatch	125
Megascops	69	Canada	125
asio	69	Red-bellied	125
Melanerpes	77	Red-breasted	125
carolinus	77	White-breasted	125
erythrocephalus	77	Nuthatches	125
Meleagrinae	59	Nyctala	69
Meleagris	59	acadica	69
gallopavo	59	tengmalmi richardsoni	69
Melospiza	99	Nyctea	71
fasciata	99	nyctea	71
georgiana	100	Nycticorax	44
lincolni	99	nycticorax naevius	44
Merganser	31	violaceus	5
American	31	Oidemia	38
americanus	31	americana	38
Hooded	32	deglandi	38
Red-breasted	32	perspicillata	38
serrator	32	Old Squaw	37
Mergansers	31	Old Wife	37
Merginae	31	Olive-backed Thrush	129
Merula	130	Olive-sided Flycatcher	82
migratoria	130	Olor	40
Michigan Bird Fauna	4	buccinator	40
Michigan Bird Laws	6	columbianus	40
Micropalama	49	Orange-crowned Warbler	111
himantopus	49	Orange-throated Warbler	111
Micropodidae	79	Orchard Oriole	89
Milvulus tyrannus	5	Oregon Junco	99
Mimine	120	Oregon Snow Bird	99
Mimus	120	Oriole	89
polyglottos	121	Baltimore	89
Mississippi Kite	61	Orchard	89

	Page.		Page.
Orioles	87	Pectorial Sandpiper	50
Ortolan	45, 87	Peet-weet	53
Oscines	84	Pelecanidæ	31
Osprey	66	Pelecanus	31
American	66	erythrorhynchos	31
Ospreys	66	Pelican	31
Otocoris	84	American White	31
alpestris	84	Pelicans	31
alpestris praticola	84	Perching Birds	81
Oven Bird	116	Perdicinæ	56
Owl	67	Peregrine Falcon	66
Acadian	69	Perisoreus	85
American Barn	67	canadensis	86
American Hawk	71	Petrochelidon	103
American Long-eared	88	lunifrons	103
Barred	68	Pewee	82
Great Gray	68	House	82
Great Horned	70	Wood	83
Hawk	71	Pewit	82
Hoot	68, 70	Pewit Flycatcher	82
Long-eared	68	Phalacrocoracidæ	30
Mottled	69	Phalacrocorax	31
Prairie	68	carbo	31
Richardson's	69	dilophus	31
Saw-whet	69	Phalarope	47
Screech	69	Gray	47
Short-eared	68	Northern	47
Snowy	71	Red	47
Western Horned	71	Red-necked	47
White	71	Wilson's	47
Owls	67	Phalaropes	47
Barn	67	Phalaropodidæ	47
Common	67	Phalaropus	47
		lobatus	47
Painted Longspur	95	tricolor	47
Palm Warbler	116	Phasiani	56
Paludicolæ	44	Phasianidæ	59
Pandion	66	Pheasant	58
haliaetus carolinensis	66	Pheasants	56, 59
Pandioninæ	66	Philadelphia Vireo	108
Paridæ	125	Philip Sparrow	96
Parinæ	126	Philohela	48
Paroquet	72	minor	48
Carolina	72	Phœbe	82
Paroquets	72	Pica	85
Parrots	72	pica hudsonica	85
Partridge	57	Pici	74
Spruce	57	Picidæ	74
Partridges	56	Picooides	75
Parula Warbler	112	arcticus	75
Parus	128	americanus	75
atricapillus	127	Pied-billed Grebe	25
bicolor	126	Pigeon	59
carolinensis	5	Passenger	59
hudsonicus	127	Wild	59
Passer	96	Pigeon Hawk	66
domesticus	96	Pigeons	59
Passerella	100	Pileated Woodpecker	76
iliaca	100	Pine-creeping Warbler	115
Passerina	101	Pine Finch	94
cyanea	101	Pine Grosbeak	91
versicolor	101	Pine Linnæ	94
Passeres	81	Pine Siskin	94
Pavonella	5	Pine Warbler	115
pugnax	5	Pinicola	91

	Page.		Page.
Pinicola, enucleator	91	Quail	56
Pinnated Grouse	58	Quiscalas	90
Pintail	35	quicula	5
Pipilo	100	quiscula æneus	90
erythrophthalmus	100	Rail	45
Piping Plover	55	Carolina	45
Piping Ring Plover	55	King	45
Pipit	120	Red-breasted	45
American	120	Virginia	45
Pipits	120	Yellow	46
Piranga	102	Ralli	45
erythromelas	102	Rallidæ	45
rubra	102	Rallinæ	45
Plectrophenax	94	Rallus	45
nivalis	94	elegans	45
Plagadis	41	longirostris crepitans	5
autumnalis	41	virginianus	45
Plover	52	Rails	44-45
American Golden	55	Raptores	60
Belted Piping	56	Raven	86
Black-bellied	54	Night	44
Bull-head	54	Razor-billed Auk	26
Field	52	Recurvirostra	48
Kildeer	55	americana	48
Piping	55	Recurvirostridæ	48
Piping Ring	55	Red-bellied Nuthatch	125
Prairie	52	Red-bellied Woodpecker	77
Ring	55	Redbird	100, 102
Ring-neck	55	Black-winged	102
Semipalmated	55	Summer	102
Upland	52	Virginia	100
Plovers	54	Red-breasted Nuthatch	125
Plum Pudden	41	Red-breasted Sandpiper	49
Pochard	35	Red-breasted Snipe	49
American	35	Red Crossbill	93
Podicipedes	24	Red-eyed Greenlet	108
Podicipidæ	24	Red-eyed Vireo	108
Podilymbus	25	Red-head	35
podiceps	25	Red-headed Woodpecker	77
Polioptila	128	Red-necked Grebe	24
cærulea	128	Red-necked Phalarope	47
Polioptilinæ	128	Red Phalarope	47
Pomarine, Jaeger	27	Redpoll	93
Poocætes	95	Common	93
gramineus	95	Greater	94
Porzana	45	Lesser	93
carolina	45	Red Shouldered Buzzard	64
noveboracensis	46	Red Shouldered Hawk	64
Prairie Chicken	53	Red-shouldered Blackbird	88
Prairie Hen	58	Redstart	119
Prairie Horned Lark	84	American	119
Prairie Owl	68	Red-tailed Buzzard	63
Prairie Plover	52	Red-tailed Hawk	63
Prairie Warbler	116	Red-throated Diver	26
Progne	102	Red-throated Loon	26
subis	103	Red-winged Blackbird	88
Prothonotary Warbler	110	Reed Bird	87
Protonotaria	110	Regulus	127
citrea	110	calendula	128
Psittaci	72	satrapa	127
Psittacidæ	72	Regulinæ	127
Ptarmigan (Willow)	58	Rice Bird	87
Puffin	26	Richardson's Owl	69
Purple Finch	92	Ring-billed Gull	28
Purple Martin	102	Ring-neck	55

	Page.		Page.
Ring Plover.....	55	Scotiapteryx.....	68
Rissa.....	27	cinerea.....	68
tridactyla.....	27	Screech Owl.....	69
Robin.....	130	Sea Coot.....	38
American.....	130	Sea Dove.....	27
Ground.....	100	Sea Swallows.....	29
Marsh.....	100	Seiurus.....	116
Swamp.....	129-130	aurocapillus.....	116
Robin Snipe.....	49	motacilla.....	117
Roseate Tern.....	30	noveborecensis.....	116
Rose-breasted Grosbeak.....	101	Semipalmated Plover.....	55
Rose-breasted Song Grosbeak.....	101	Semipalmated Sandpiper.....	50
Rough-winged Swallow.....	104	Semipalmated Tattler.....	52
Royal Tern.....	29	Setophaga.....	119
Ruby-crowned Kinglet.....	128	ruticilla.....	119
Ruby-throated Humming Bird.....	80	Sharp Shinned Hawk.....	62
Ruddy Duck.....	38	Shore Birds.....	47
Ruffed Grouse.....	58	Shore Lark.....	84
Rusty Blackbird.....	90	Short-billed Curlew.....	53
Rusty Grackle.....	90	Short-billed Marsh Wren.....	123
Sabine's Gull.....	29	Short-eared Owl.....	68
Sanderling.....	51	Short-tailed Tern.....	30
Sandhill Crane.....	44	Shoveller.....	34
Sand Martin.....	104	Shrike.....	107
Sandpiper.....	53	Northern.....	107
American Green.....	52	Logger-head.....	107
Baird's.....	50	White-rumped.....	107
Bartramian.....	52	Shrikes.....	107
Black-bellied.....	50	Shytopoke.....	41
Bonaparte's.....	50	Sialia.....	131
Buff-breasted.....	53	arctica.....	5
Curlew.....	50	sialis.....	131
Least.....	50	Sickle-billed Curlew.....	53
Pectoral.....	50	Sylvania.....	118
Red-backed.....	50	canadensis.....	119
Red-breasted.....	49	mitrata.....	118
Semipalmated.....	50	pusilla.....	119
Solitary.....	52	Siskin.....	94
Spotted.....	53	Pine.....	94
Stilt.....	49	Sitta.....	125
White-rumped.....	50	canadensis.....	125
Sandpipers.....	48	pusilla.....	5
Sand Swallow.....	104	carolinensis.....	125
Sap Sucker.....	76	Sittinæ.....	125
Yellow-bellied.....	76	Skuas.....	27
Sarcorhamphi.....	60	Skunk Blackbird.....	87
Savanna Sparrow.....	96	Smith's Longspur.....	95
Saw-bill.....	82	Smithsonian Gull.....	28
Saw-whet Owl.....	69	Snipe.....	49
Sayornis.....	82	American.....	49
phoebe.....	82	Grass.....	50
saya.....	5	Gray.....	49
Scarlet Tanager.....	102	Gray-backed.....	49
Scaup Duck.....	36	Jack.....	49-50
Greater.....	36	Red-bellied.....	49
Lesser.....	36	Robin.....	49
Scolecophagus.....	90	Stone.....	51
carolinus.....	90	Wilson's.....	49
Scolopacidae.....	48	Snipes.....	48
Scoter.....	38	Snow Bird.....	99
American.....	38	Black.....	99
American Black.....	38	Common.....	99
Surf.....	35	Oregon.....	99
Velvet.....	38	White.....	94
White-winged.....	38	Snow Bunting.....	94

	Page.		Page.
Snow Flake.....	94	Spruce Partridge.....	57
Snow Goose.....	38	Square-tailed Barn Swallow.....	103
Greater.....	39	Squawk.....	44
Lesser.....	38	Stake Driver.....	41
Snowy Heron.....	48	Starlings.....	87
Snowy Owl.....	71	Meadow.....	89
Solitary Greenlet.....	109	Steganopodes.....	30
Solitary Sandpiper.....	52	Stelgidopteryx.....	104
Solitary Tattler.....	52	serripennis.....	104
Somateria.....	38	Stercorariidæ.....	27
dresseri.....	38	Stercorarius.....	27
mollissima borealis.....	5	pomarinus.....	27
spectabilis.....	38	Sterna.....	29
Song Birds.....	81	antillarum.....	30
Soagless Perching Birds.....	81	dougalli.....	30
Song Sparrow.....	99	forsteri.....	29
Sooty Tern.....	30	fuliginosa.....	30
Sora.....	45	hirundo.....	29
Sparrow.....	95	maxima.....	29
Chipping.....	98	paradisæa.....	29
Clay colored.....	98	tschegrava.....	29
Cricket.....	97	Sterninæ.....	29
English.....	96	Stilt.....	48
European.....	96	Black-necked.....	48
Field.....	98	Stilt Sandpiper.....	49
Fox.....	100	Stilts.....	48
Grasshopper.....	97	Striges.....	67
Henslow's.....	97	Strigidæ.....	67
Lark.....	97	Strix.....	67
Leconte's.....	97	pratincola.....	67
Lincoln.....	99	Stone Snipe.....	51
Nelson's.....	97	Storks.....	41
Philip.....	76	Sturnella.....	89
Red.....	100	magna.....	89
Savanna.....	96	magna neglecta.....	89
Song.....	99	Sugar Bird.....	126
Swamp.....	100	Sula bassana.....	5
Tree.....	98	Summer Duck.....	35
Vesper.....	95	Summer Red Bird.....	102
White-browed.....	97	Summer Tanager.....	102
White-browed Crowned.....	97	Surf Birds.....	56
White Crowned.....	97	Surf Duck.....	38
White-throated.....	98	Surf Scoter.....	38
Yellow-winged.....	97	Surnia.....	71
Sparrows.....	90	ulula caparoch.....	71
Spatula.....	34	Swainson's Hawk.....	64
clypeata.....	34	Swallow.....	103
Sphyrapicus.....	75	Bank.....	104
varius.....	76	Barn.....	103
Spinus.....	94	Blue-backed.....	104
pinus.....	94	Chimney.....	79
tristis.....	94	Cliff.....	103
Spirit Duck.....	37	Eave.....	103
Spiza.....	101	Field.....	104
americana.....	101	Rough-winged.....	104
Spizella.....	98	Sand.....	104
monticola.....	98	Square-tailed Barn.....	103
pallida.....	98	Tree.....	104
pusilla.....	98	White-bellied.....	104
socialis.....	98	Swallows.....	102
Spoonbill.....	34	Swallowed-tailed Kite.....	61
Spoonbills.....	41	Swamp Angel.....	130
Spotted Sandpiper.....	53	Swamp Robin.....	129, 130
Spotted Tattler.....	53	Swamp Sparrow.....	100
Sprigtail.....	35		

	Page.		Page.
Swan	43	Thrashers	120
American	40	Thrush	129
Trumpeter	40	Brown	121
Whistling	40	Golden-crowned	116
Swans	31	Gray-cheeked	129
Swift	79	Hermit	130
Chimney	79	Louisiana Water	117
Swifts	77	Olive-backed	121
Spine-tailed	77-79	Small-billed Water	116
Swimmers	31	Song	129
Lamellirostral	31	Swainson's	129
Long-winged	27	Water	116
Totipalmate	30	Wilson's	129
Sycamore Warbler	114	Wood	129
Sylvania	118	Thrushes	116, 121, 129
canadensis	119	Thryothorus	122
mitrata	118	bewickii	122
pusilla	119	ludovicianus	122
Sylviidæ	127	Thunder Pumper	41
Symphemia	52	Tip-up	52, 53
semipalmata	52	Tit Lark	120
Synthliboramphus	28	American	120
antiquus	26	Tit Lark Warbler	116
Syrnium	68	Titmice	123
nebulosum	68	Titmouse	123
		Black-fronted	123
Tachycineta	104	Tufted	123
bicolor	104	Tits	125
Tanager	102	Tomtit	125
Scarlet	102	Top-knot	32
Summer	102	Totipalmate Swimmers	30
Tanagridæ	102	Totanus	51
Tattler	51	flavipes	52
Bartramian	52	melanoleucus	51
Greater	51	solitarius	52
Lesser	52	Towhee	100
Semipalmated	52	Towhee Bunting	100
Solitary	52	Traill's Flycatcher	83
Spotted	53	Tree Duck	35
Teal	33	Tree Sparrow	93
Blue-winged	33	Tree Swallow	104
Green-winged	33	Tringa	49
Teeter-tail	53	alpina pacifica	50
Telltale	51	bairdii	50
Tennessee Warbler	111	canutus	49
Tern	29	ferrugineæ	50
Arctic	29	fuscicollis	50
Black	30	maculata	50
Caspian	29	maritima	5
Cayenne	29	minutilla	50
Common	29	Trochili	79
Foster's	29	Trochilidæ	79
Gull-billed	29	Trochilus	80
Least	30	colubris	80
Marsh	29	Troglodytes	122
Roseate	30	ædon	122
Royal	29	hiemalis	123
Short-tailed	30	Troglodytidæ	120
Sooty	30	Troglodytinæ	122
Wilson's	29	Trumpeter Swan	40
Terns	27, 29	Tryngites	53
Tetraonidæ	56	subruficollis	53
Thistle bird	94	Tufted Titmouse	126
Thrasher	121	Turdidæ	120
Brown	121	Turdinæ	129

	Page.		Page.
Turdus.....	129	Warbler, Black-throated Green.....	115
aliciae.....	129	Blue.....	113
aonalaschkæ pallasii.....	130	Blue Golden-winged.....	111
fuscescens.....	129	Blue-winged.....	111
mustellinus.....	129	Blue-winged Yellow.....	111
ustulatus swainsonii.....	129	Blue Yellow-backed.....	112
Turkey.....	59	Canadian.....	119
Wild.....	59	Canadian Flycatching.....	119
Turkeys.....	59	Cape May.....	112
Turnstone.....	56	Cerulean.....	113
Turnstones.....	56	Chestnut-sided.....	113
Tympanuchus.....	58	Connecticut.....	117
americanus.....	58	Golden-crown.....	113, 127
Tyrannidæ.....	81	Golden Swamp.....	110
Tyrannus.....	81	Golden-winged.....	111
tyrannus.....	81	Green Black-capped yellow.....	119
		Hemlock.....	114
Upland Plover.....	52	Hooded.....	118
Uria.....	26	Hooded Flycatching.....	118
troile.....	26	Kentucky.....	117
Urinator.....	25	Kirtland's.....	115
arcticus.....	26	Large-billed Wagtail.....	117
imber.....	25	Magnolia.....	113
lumme.....	26	Maryland Yellow-throat.....	118
Urinatoridæ.....	25	Mourning.....	117
		Myrtle.....	113
Varied Bunting.....	101	Nashville.....	111
Veery.....	129	Orange-crowned.....	111
Velvet Scoter.....	38	Orange-throated.....	114
Vesper Sparrow.....	95	Palm.....	116
Vireo.....	107	Parula.....	112
flavifrons.....	109	Pine.....	115
gilvus.....	108	Pine-creeping.....	115
noveboracensis.....	109	Prairie.....	116
olivaceus.....	108	Prothonotary.....	110
philadelphicus.....	108	Sycamore.....	114
solitarius.....	109	Tennessee.....	111
Vireo.....	107	Titlark.....	116
Blue-headed.....	109	Wag-tailed.....	116
Brotherly Love.....	108	White-browed Yellow-throat.....	114
Philadelphia.....	108	Willow.....	110
Red-eyed.....	108	Wilson's.....	119
Warbling.....	108	Worm-eating.....	111
White-eyed.....	109	Yellow.....	112
Yellow-throated.....	109	Yellow Redpoll.....	116
Vireonidæ.....	107	Yellow-rumped.....	113
Vireos.....	107	Yellow-throated Ground.....	118
Virginia Red Bird.....	100	Warblers.....	109
Vulture.....	60	Wood.....	109
Turkey.....	60	Warbling Greenlet.....	108
Vultures.....	60	Warbling Vireo.....	108
American.....	60	Water Wagtail.....	116
		Waterwitch.....	25
Wagtail.....	52, 53, 120	Waxwing.....	105
Wood.....	116	Bohemian.....	105
Wagtail Warbler.....	116	Cedar.....	106
Wagtails.....	120	Waxwings.....	105
Warbler.....	110, 127	Western Grebe.....	24
Bay-breasted.....	114	Western Horned Owl.....	71
Black and White.....	110	Western Meadow Lark.....	89
Black and Yellow.....	113	Whip-poor-will.....	78
Blackburnian.....	114	Whistler.....	86
Black-capped Yellow.....	119	Whistling Swan.....	40
Black-poll.....	114	White-bellied Swallow.....	104
Black-throated Blue.....	112	White-breasted Nuthatch.....	125

	Page.		Page.
White-browed Crowned Sparrow	97	Wood Wagtail	116
White-browed Sparrow	97	Worm-eating Warbler	111
White-browed Yellow-throated Warbler	114	Wren	122
White-cheeked Goose	40	Bewick's	122
White-crowned Sparrow	97	Big Brown	121
White-eyed Vireo	109	Carolina	122
White Owl	71	Golden-crowned	127
White-rumped Sandpiper	50	House	122
White-rumped Shrike	107	Long-billed Marsh	124
White Snow Bird	94	Ruby-crowned	128
White-tailed Kite	61	Short-billed Marsh	123
White-throated Sparrow	98	Winter	123
White-winged Crossbill	98	Wrens	120
White-winged Gull	27		
White-winged Scoter	38	Xanthocephalus	88
Whooping Crane	44	xanthocephalus	88
Widgeon	33	Xema	29
American	33	sabinii	29
Willet	52		
Willow Ptarmigan	58	Yellow-bellied Flycatcher	83
Willow-Warbler	110	Yellow-bellied Sap Sucker	76
Wilson's Phalarope	47	Yellow-bellied Woodpecker	76
Wilson's Snipe	49	Yellow-billed Cuckoo	73
Wilson's Tern	29	Yellow-breasted Chat	118
Wilson's Thrush	129	Yellow Bird	94
Wilson's Warbler	119	Summer	112
Winter Wren	128	Yellow Crake	46
Woodcock	48, 76	Yellow Hammer	77
American	48	Yellow-headed Blackbird	88
Wood Duck	35	Yellow-legs	52
Woodland Warblers	109	Greater	51
Woodpecker	75	Yellow Redpoll Warbler	116
American Three-toed	75	Yellow Rail	46
Arctic Three-toed	75	Yellow-rumped Warbler	113
Banded-backed Three-toed	75	Yellow Shanks	52
Black	76	Yellow-throat	118
Black-backed Three-toed	75	Maryland	118
Downy	74	Yellow-throated Ground Warbler	118
Golden winged	77	Yellow-throated Vireo	109
Hairy	74	Yellow Warbler	112
Pileated	76	Yellow Winged Sparrow	97
Red-bellied	77		
Red-headed	77	Zenaidura	60
Yellow-bellied	76	macroura	60
Woodpeckers	74	Zonotrichia	97
Wood Pewee	88	albicollis	98
Wood Thrush	120	leucophrys	97

